THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Mid-Continent Oil & Gas Association, Texas division, San Angelo, Tex., Nov. 8.

American Petroleum Institute, Technical Committee on Prevention of Pollution, Chicago, Nov. 30.

American Petroleum Institute, Stevens Hotel, Chicago, Dec. 3, 4 and 5.

Indiana Petroleum Association, Indianapolis, Dec. 5, 6.

Nebraska Independent Oil Men's Association, Paxton Hotel, Omaha, Neb., Dec. 11, 12, 13.

Ohio Petroleum Marketers Association, Deshler-Wallick Hotel, Columbus, O., Feb. 19, 20, 21.

Michigan Oil Men's Association, Statler Hotel, Detroit, March 19, 20, 21.

NATIONAL PETROLEUM NEWS

Vol. 21 No. 45

Published by

The National Petroleum Publishing Co.
1213 W. Third St., Cleveland, O.

Tel. CHerry 7672

Branch Offices:

Tulsa, 904 World Bldg., Tel. 3-7132.

New York, 342 Madison Ave., Tel. Vanderbilt 3951.

Houston, 2020 Gulf Bldg., Tel. Fairfax 6286.

Chicago, 35 E. Wacker Drive, Tel. State 4141.

Subscription rate $3.50 per year, U. S., Mexico and Canada; $5 Foreign countries. Current copies 10 cents; for back issues more than two months old 25 cents per copy.

All contents copyrighted, 1929, Trade Mark Registered U. S. Patent Office.

Member Audit Bureau of Circulations and Associated Business Papers.

General

Other Flush Fields in California Join Proration Movement 19
Proration in Mid-Continent Increasingly Effective 20
Proration to Swing Crude Supply Into Balance 20
Marketing Problems to Get Attention at Annual Meeting of A.P.I. 23
Wrench, Packing Reamer, Socket Yield $10 Ideas in Contest 25
Plan Campaign to Reduce Outage Claims on Natural Gasoline 26
A.P.I. Report of Refinery Operations 27
Cooperate in Devising Standard Method of Taking Tank Car Temperature 28
Stabilization in Texas-New Mexico Regions Still Holding 33
Oklahoma City Adds Two More Wells; Showing in Kansas Wildcat 39
Well Potentials in Marshall Pool Computed from Master Curve 40
Only Small Cut Made in Output of Santa Fe Springs Field 44
Drilling Reports from Leading Fields 45, 46, 47, 48
Cost Accounting for Refineries with Skimming and Cracking Plants—*by C. E. Votrain* 64
More Companies Sign Ethics Code 71
Gasoline Consumption Up 16.4% in 39 States 89

Engineering

Application of Vacuum Distillation to Producing Lubricating Oils—*by Earl Petty* 30
Wildcatters Still Like the Osage Despite Doubts of Majors 50
Reclamation of Lubricants Reduces Expense at Compressor Plants 53
Prairie Abandons Cement Tanks for Storing Sulfur Crude 55
Accurate Method Necessary to Avoid Error in Tank Car Temperature 57
Steam Distillation Suggested for Charcoal Tests—*by R. J. Jones* 61

Merchandising

U. S. to Survey Station Business in the Southwest 21
Station Gardens are Sales Help Says Prize Winner 75
Personal Calls Bring Station Business 79
Furnace Oil Consumer May Order Oil by Grade Number this Season 81
Gasoline Distribution as an Expert on Retailing Sees it 84

Markets

Mid-Continent, Export Buying Tends to Stabilize Gasoline 93
Gulf Lubes in Fair Demand 94
Chicago, U. S. Motor Prices Cover Smaller Range 95
Refinery Price Tables 96, 98, 99
California, Gasoline Steady Despite Cheaper Crude 102
Pennsylvania, Kerosene and Fuel Oil Active 103
Eastern Domestic, Gasoline Demand Eases; Prices Steady 104
Gulf Coast, Large Cargo of Lubes Sold for Export 104
Wax, Foreign Activity Subsides 105
Complete Seaboard Prices 106
Tank Wagon Price Tables 108, 109
Crude Oil Prices, All Fields 111, 113

Departments

The Mid-Continent Skyline 35
Our Industry 41
On the Western Front 45
Letters to Editor 73
New Stations Building 77
On the Lazy Bench 87
Oil Company Finance 116, 118

HERBERT PAUL GRIMM, oil umpire at Santa Fe Springs, Calif., under the new voluntary curtailment plan proposed by California oil companies, was born in Franklin, Pa. His family was in the producing business in Pennsylvania.

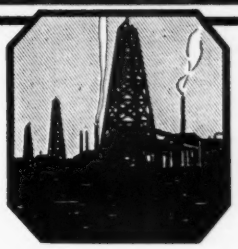
Mr. Grimm was educated in Franklin and in Los Angeles. During the World war he served for one year over-seas.

In 1919 he went to the Texas oil fields, but returned to California in 1922 to join the George F. Getty Co., Independent operators. In July of this year he resigned from the Getty organization and started his own business.

Mr. Grimm was chairman of the Santa Fe Springs gas conservation committee formed in 1928.

NATIONAL PETROLEUM NEWS

Published at
1213 W. Third St.
Cleveland



Branch Offices
Tulsa, New York, Houston,
Chicago

Vol. 21 CLEVELAND, November 6 No. 45

Other Flush Fields in California Join Proration Movement

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES, Nov. 2. THE word goes out that California daily average production will be cut to less than 650,000 barrels before the close of week ending Nov. 9.

It is anticipated that crude oil prices will be restored to their former schedules as soon as curtailment in the flush fields has become effective.

Santa Fe Springs operators, under the guidance of Umpire Paul Grimm, will pinch their wells back so that the aggregate production for the field will not exceed 150,000 barrels.

The umpire, in an order sent out Oct. 31, asked all operators in this field to cut their production 50 per cent as of Oct. 31. Production was approximately 272,000 barrels before the cut.

A cut of fifty per cent is ordered at first so as to reduce the field's output as quickly as possible. When the umpire is assured that this cut has been made, other production arrangements will be made. It is estimated that a final cut of 40 per cent will be made in this field's daily yield.

Operators at Signal Hill met in the offices of the Jergins Petroleum Syndicate, an Independent company, in the Long Beach field, and elected Neil Anderson as umpire for that field and accepted the same agreement as that drawn up by operators at Santa Fe Springs under the direction of E. D. Reiter, legal counsel for Miley Oil Co.

At Signal Hill the allowed production will be in the neighborhood of 100,000 barrels, or about 40 per cent less than the output for Oct. 31, estimated to be 170,000 barrels. The umpire states that he expects to have the wells on their way to being shut-in by Nov. 4.

At Seal Beach and Ventura Avenue, because the companies are fewer in number and townlot holdings are not in evidence, the operators will effect a curtailment averaging 40 per cent in the former and 25 to 30 per cent in the latter field.

Standard Oil Co. of California, Continental Oil Co. and Associated Oil Co. officials met Nov. 1 and decided to reduce production at Seal Beach from 38,000 barrels to 25,000 daily. These three companies own nearly all the acreage at Seal Beach and therefore a cut is assured.

Although the situation in California was anything but promising a few weeks ago, it has a much brighter aspect as the light of cooperation shines on it. The Wilshire interests have agreed to cut their production at Santa Fe Springs, if the umpire can get the consent of their landowners.

It was the Wilshire Co. that submitted the suggestion to the Superior Court that all necessary parties be included in the injunction hearing, and later took the matter to the court of appeals when a motion to this effect denied by the lower court. This company has several leases calling for maximum production at all times and, therefore, holds that it is its right to demand that lessors and landowners be included in any program or court action being made.

E. D. Reiter, chairman of the Independent committee, announced that the Wilshire company was the first of the Santa Fe Springs operators to 'phone in that its production had been cut. He also indicated that probably old settled production in the San Joaquin Valley field would be shut in to help arrive at the desired output of 650,000 barrels for the state.

Several operators have expressed the opinion that, with a cut of 40 to 50 per cent in the flush fields, tubing and casing pressures will build up to unsafe values. From reports made since Nov. 1, it appears that these predictions may cause a smaller percentage in reduction to be adopted.

This fact may be especially true of wells where the fittings are not of the best, and a tubing pressure of 900 pounds or a casing pressure of 1400 pounds, such as have been reported since the curtailing was started, might result in a blowout. However, until such time as the pressures are found to be unsafe it is expected that the operators will shut in their wells in the required amount.

The time at which California's gas conservation law will be enforced still seems far in the distance as the result of the action taken by the district court of appeals, Oct. 29, when it ordered continued until Nov. 12 the hearing on the pleas of Independent operators of Santa Fe Springs for a writ of prohibition restraining Superior Judge Hazlett from proceeding with the injunction hearing without bringing in all parties considered by the Independents to be necessary to protect their rights.

No reason was given by any of the interested parties as to why the case was laid over until this later date. Such action on the part of the Appellate court is a blow for the state as Judge Hazlett of the Superior Court denied a continuance of the hearing

at the same time as he denied the motion to bring in other parties, such as lessors, mortgagees, and landowners.

It is expected that the hearing will be taken by the state to the Supreme court as soon as possible in order to hasten matters. Curtailment of production under an umpire will be only a temporary affair in effect until such time as the gas law is enforced. At the latest it is thought that the law will be enforced within 90 days.

Barnsdall-Rio Grande joint interests have cut production in their wells at Elwood approximately 30 per cent and will cut an additional 10 per cent if necessary. This action is purely voluntary.

Proration in Mid-Continent Increasingly Effective

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Nov. 2

OKLAHOMA, Kansas and Texas Panhandle operators, going along under short-term proration plans, were greatly heartened the past week by reports that California's producing industry had agreed upon an effective method of cutting back production.

There was considerable worrying for several days, right after the recent drastic price reduction in California was announced. It was feared that it might be difficult to hold Mid-Continent operators in a cooperative frame of mind, particularly if the low prices in California brought about a crude price reduction here.

Texas Panhandle operators showed their lightened spirits after the California news came in by voting a 30-day continuance of restrictive agreement on drilling wells, running to Dec. 4.

The Wright pool, Sedgwick county, Kans., producers, who have prorated their production 50 per cent for the past 30 days, agreed to carry on in the same manner for another 30 days.

This is the second 30-day continuance in Gray county, Texas, and it may not be necessary to prolong the drilling shut down after this period ends, as production has declined sharply. There are about 25 wells now shut down on top of the pay.

In Oklahoma proration went on a new basis Nov. 1, according to the order issued in October by the state corporation commission. The Oklahoma City field, whose 100 per cent shut down of production terminated Oct. 12, produced wide open, theoretically, the rest of October, but on Nov. 1 went on a 40 per cent proration. That is, its production was to be 60 per cent of the rated capacity of the wells. East Earlsboro, the state's other principal flush pool, also takes a 40 per cent cut in its production. In December both will be prorated 50 per cent. Other fields of the state, in November, are curtailed 20 per cent in production.

The Oklahoma City proration is being handled on a time basis and for this purpose the wells are divided into two classes, designated A and B. On Nov. 2 the A wells were left open while the B wells were shut in. This arrangement was to continue four days. The B wells then are to be opened, Nov. 6, and the A wells shut in. The plan produces three intervals during the months when both classes are open for two days at the same time.

Wells are so divided that direct offsets do not produce at the same time.

It is not yet possible to present final figures on the workings of proration elsewhere in the state. It is known, from reports received by Umpire Collins, that everything is proceeding satisfactorily and he told NATIONAL PETROLEUM NEWS that he believes, when the October report is completed, it will show that the producers have come within two per cent, over or short, of the amounts allotted as their production.

The chief trouble thus far has been the delay in collecting figures. During the big days in the Seminole district, companies received daily reports of the production of every lease. Now, with little of an exciting nature to watch, scouting forces have been reduced and the reports on production are received once a week. It is therefore, a much bigger job for the umpire to collect the figures than it was a year or so ago.

Of course, some natural decline has occurred in several fields, but proration has achieved a large part of the result. Notwithstanding that Oklahoma City put 64,000 barrels into the first column shown, the total is only 13,000 barrels higher. Production for the entire state the past week was estimated at 660,870 barrels which, minus the 870, is the figure operators are shooting at as the average for the last three months of 1929.

Estimates of the daily average production for the past week of the fields now under proration, compared with estimates on their output as of Oct. 12—proration in all areas except East Earlsboro and Oklahoma City began Oct. 16—are as follows:

Daily Production, Barrels

Field	Week End Nov. 2	Week End Oct. 12
Searight	10,400	11,500
Seminole	27,230	31,950
East Seminole	5,160	7,300
Bowlegs	26,615	30,750
Earlsboro	66,540*	74,400
Little River	70,110**	81,950
Carr City	9,910	9,700
Maud	10,345	10,600
Mission	17,000	22,300
St. Louis	50,925	58,650
Pearson	920	1,050
Asher	5,260	7,200
Sasakwa	11,590	12,200
Oklahoma City	65,095	1,000***
Allen	22,320	24,200
Logan county	15,820	17,500
	415,240	402,250

*Includes East Earlsboro, 25,900 barrels.

**Includes East Little River, 22,370 barrels.

*** Shut in

Proration to Swing Crude Supply Into Balance

NEW YORK, Nov. 4.—If operators in the flush California fields succeed in their voluntary curtailment program to reduce output in that state 225,000 barrels a day to 650,000 barrels, production and consumption of crude oil will be in balance in this country for the first time in many years.

This announcement was made here today by E. B. Reeser, president of the Barnsdall Oil Corp., president of the American Petroleum Institute, upon receipt of latest developments from fields in this country where proration of crude output is in effect. His statement follows:

"We are advised that operators in the various flush fields of California have adopted curtailment programs which will reduce production in that state 225,000 barrels per day to approximately 650,000 barrels per day. A definite understanding to the effect that crude prices will be restored in each field when and as the curtailment reaches the proper volume has helped to bring about this result.

"In Oklahoma, operating under an order of the State Corporation Commission, production has been curtailed to 650,000 barrels per day.

"The Kansas operators have voluntarily agreed to reduce production in the flush fields to 50 per cent of the potential output.

"In Texas, acting under orders from the Railroad Commission, curtailment in the flush fields of western Texas has reduced the output to a considerable extent."

U. S. to Survey Station Business In the Southwest

WASHINGTON, Nov. 2

WHAT is probably the most intensive study ever planned of the oil industry, in all its branches, and its relation to the general growth of this country, has been announced by the Department of Commerce.

The study is a part of the general marketing and distribution survey of the nation being carried on by the commerce department and will tie into the general census of industries planned by Hoover when he was head of the commerce department.

The survey of the oil industry is to be limited to the southwest, a natural center of production, refining and marketing, in accordance with the plan of the general survey, which calls for nine districts, or provinces, in the country which embrace the principal activities of various industries.

The study of the oil industry is to be carried on in Arkansas, Mississippi, Missouri, Louisiana, Oklahoma, Texas and the western part of Tennessee, and, to embrace the full producing district of the southwest, Kansas and four counties in New Mexico are to be included for the survey of production only.

A complete study of gasoline stations is planned as a chapter of the third part of the report, which takes up marketing of petroleum products.

The basis for the study of gasoline stations is a questionnaire to be put in the hands of oil companies operating stations and owners of independent stations shortly after the first of the year, the answers to questions asked to be based on 1929 business.

The questionnaire, copy of which is published here, goes in detail into the location of the station, whether on a side street, main highway, or rural road, whether it is on a corner, distance from the nearest station and so on.

It includes the following general headings—location, type of station, gasoline sales, lubricating oils and greases, marketing policies, and miscellaneous.

The thoroughness of the study as planned can be seen by the type of questions asked under the heading of marketing policies, for example. What advertising medium is employed, is asked, how many men are kept on duty and the hours the station is open, whether other services than the sale of gasoline and oil is carried on, what free services are given, what discounts are given, what degree of salesmanship is exercised at the station and so on.

The first portion of the report to be prepared from this survey of the oil industry in the southwest deals with the economic consequences of the petroleum industry. It will include the following topics:

"Comparison of value of crude oil and principal petroleum products with the value of other products originating in the Gulf southwest.

"The growth of population, property values, postal revenue, bank clearings, telephone installation, etc., resulting from petroleum development or that which may be correlated therewith.

"Comparison of number of people employed in the petroleum industry with the number employed in other industries (including agriculture) in the Gulf southwest.

"Railroad development and growth in traffic due to oil. Harbor development and growth of port business due to oil shipments. Pipeline development, etc.

"Fuel supply as affected by oil and gas production.

"Industries resulting from or based upon oil and gas production. This could include industry establishment based upon low-priced fuel and might also be correlated with the general growth of the area.

"Physical developments resulting from taxes, such as road development paid for by gasoline taxes.

"The effect of the petroleum industry on education in the area, through revenue derived from oil-producing school lands; endowments attributable to oil; or the development of petroleum courses at state and other institutions."

The second part of the report is to carry the data on the oil producing and refining industry in the southwest. It will take up production of crude and crude oil prices; production of natural gas and gasoline; refining, including a review of processes used, location, type and size of refinery, output and distribution; manufacture of carbon black and transportation and relative transportation charges as compared with other fields.

The third part of the report will go into the details of distribution of petroleum products in this territory. The questionnaire to gasoline station operators, which is a part of this portion of the report, follows:

The Questionnaire for Gasoline Retailers

I. Location.
1. Name of Owner
2. Name of Operator
3. Firm Name
4. Address
   Street
   City or Town
   County
   State
5. Is station situated on a:—
   a. Principal street?
   b. Is station on street corner?
      (1) If so, is there an entrance from two streets?
   c. Side street?
   d. Rural road?
   e. Main highway?
6. Approximately how far is the nearest filling station?

II. Type of Station
1. What type is the station:—
   a. Drive in?
      (That is a station set back from the road primarily devoted to the sale of gasoline and oil)
   b. Roadside fill?
      (Stations combined with unrelated businesses such as lunchrooms, hardware stores, etc. located in country)
   c. Curbside fill?
      (Same as "b" but located in cities)
   d. Garage?
      (Stations combined with garages primarily designed for the storage, sale and repair of cars)
   e. Bulk filling station?
      (Stations operated on the property of oil Co. Bulk stations where gasoline is unloaded from tank cars)
   f. "Super" station?
      (Stations combined with related businesses other than garages such as sale and serving of lubricating oil and greases and accessories such as tires and batteries)

2. Is the station equipped for complete crank case and incomplete crank case and lubricating service?
(That is changing motor oil and lubricating motor and chassis)
3. How many oiling pits has the station?
4. How many car elevating hoists for chassis lubrication has the station?
5. Is the station equipped to furnish air?
6. Is the station equipped with toilet facilities for the use of the motorist?
7. Is the drive covered so that cars are under a roof while being serviced?
8. Is the station one of a chain?
a. How many other stations are there in the same chain in the state?
9. Is station owned and operated by an oil company?
(That is a company producing, refining or operating a bulk storage plant and selling their products by tank wagon delivery)
10. Is station owned by an oil company but operated by a private individual?
11. Is station owned and operated as such by private individuals?
12. What are the dimensions of the station property?

III. Gasoline sales.
1. How many gasoline pumps are there in the station?
2. How many brands of gasoline are sold?
a. 1 Brand
b. 2 Brands
c. 3 Brands
d. 4 Brands
e. 5 or more
3. How much regular gasoline did you sell during 1929?
4. How much High-Test or Special gasoline (exclusive of Ethyl Gasoline)?
5. How much Ethyl Gasoline?
6. What do you estimate the average size of sale of gasoline?

IV. Lubricating Oils and Greases.
1. How many brands of oil do you carry?
2. How many brands of grease?
3. How much lube oil did you sell during 1929?
4. How many pounds of lube grease did you sell during 1929?

V. Marketing Policies.
1. How many hours a day is the station open for business?
2. Do you grant discounts to regular patrons?
3. What advertising medium is employed?
a. Road signs?
b. Local papers?
c. Direct mail?
d. What other form?
4. How many men are employed?
a. How many shifts?
5. Do you operate any other business in connection with the sale of gasoline:—
a. Tire repair shop?
b. Battery service?
c. Automobile accessory sales?
d. Tire sales?
e. Lunch room?
f. Food sales?
g. If any other please state what?
6. What free services do you give:—
a. Lubricating
b. Air and water
c. Tire changing
d. If any other please state
7. Please mark (1, 2, 3, etc.) what you consider to be the order of importance in obtaining trade:—
a. Location of station
b. Appearance of station (whether of attractive design, well painted, good looking grounds, etc.)
c. Free Service
(Such as wiping wind shields filling tires, etc.)
d. Advertising
e. Discounts to regular patrons
f. Salesmanship:
(Courtesy of attendants and the attention they give the motorist)
g. Brand of gasoline and oil sold
h. Up-to-date equipment
8. Do you believe that the trend is away from road-side or curb-side fills and poor looking outlets and toward fewer and better drive in service stations?

VI. Miscellaneous:—
1. How was the station financed?
a. Private capital?
b. Sale of stock?
c. Rental from gasoline distributors?
d. Equipment Lease?
2. What is the capital investment in:—
a. Land?
b. Buildings?
c. Equipment?
3. What is the yearly operating expense for:—
a. Salaries
b. Wages
c. Maintenance
d. Repairs
e. If not itemized, what is total
4. Do you carry fire insurance?
5. What rate of depreciation is charged against gross profits
6. What were the net profits of the station for 1929?
7. What percentage of your profit is made from sale of:—
a. Gasoline?
b. Lubricating Oils and Greases?
c. Tire, Battery or repair services?
d. Other goods such as automobile accessories, food, etc.

Form New Natural Gasoline Processing Company

CHICAGO, Oct. 31.—To process natural gasoline for coastwise and export shipment, to utilize the lighter hydrocarbons such as butane and propane along some new lines, and to sell the conventional grades of natural gasoline, the firm of Hanlon-Buchanan, Inc., has been organized by a group of men long identified with the industry.

A processing plant is being built at Good Hope, La. General offices are in Tulsa where the company will be ready for business Nov. 1. A program is being developed to acquire natural gasoline production, which with purchases from present producers will supply material for operations.

Officers of the company are E. I. Hanlon, chairman; D. E. Buchanan, president; A. F. Wood, vice president; J. H. Boyle, secretary and treasurer; and M. F. Waters, director.

The plant with a complete terminal at Good Hope will process conventional grades of natural gasoline into a highly volatile yet stable gasoline which can be shipped in cargo with no more loss than attends shipping motor fuel, according to officials of the new company. The cargoes will be shipped in the coastwise and export trade.

Mr. Buchanan was one of the first men in the industry to develop an export market for natural gasoline. He has been an exponent of the idea that the industry must diversify and expand its markets through manufacturing special products. The present natural gasoline market, according to his views, is subject almost entirely to demands for blending natural gasoline and refined products and anything accomplished in diversifying or expanding the demand in other channels will benefit the natural gasoline industry.

The company plans to use the lighter hydrocarbons such as butane and propane in new lines. In addition to its export and coastwise trade the company will market the conventional grades of natural gasoline in tank cars.

Holliday to Talk on Management

NEW YORK, Nov. 2.—The first Ohio management conference to be held by the Policyholders Service Bureau of the Metropolitan Life Insurance Co. will be at Columbus on Nov. 20. Among the speakers will be W. T. Holliday, president of the Standard Oil Co. of Ohio, "Tapping the Man-Power in the Sales Organization."

Marketing Problems to Get Attention At Annual Meeting of A. P. I.

CLEVELAND, Nov. 4

THE marketing branch of our industry will have a larger part in the program at the annual meeting of the American Petroleum Institute this year than formerly, according to a tentative program just announced by W. R. Boyd Jr., executive vice president.

Two sessions will be devoted to discussion of the code of marketing practices and other marketing problems.

The annual meeting this year is to be held at the Stevens hotel at Chicago Dec. 3, 4 and 5. Committee meetings in advance of the general sessions are to be held on Saturday, Nov. 30 and Monday, Dec. 2.

Sir Henri Deterding, managing director of the Royal Dutch Shell companies, is to be one of the principal speakers at the meeting. He is to talk on "Common Sense in the Oil Industry." Last year the Institute had as its guest Sir John Cadman, chairman of the Anglo Persian Oil Co.

Sir Henri has been a world famous figure in oil for many years. He is credited with much of the success of the Shell which has grown from a $520,000 company to an organization with a capital of more than $1,000,000,000. He will speak at the first general Institute session on Dec. 3 following the annual address of President E. B. Reeser.

Production group meetings will include discussion of deep drilling, straight holes, air and gas lift and similar live topics.

Refinery technologists will study motor fuels, corrosion, cracking, gum formation and other subjects.

Marketing sessions will center about reports on effectiveness and interpretations of the code of marketing practices. In addition there will be discussion of domestic fuel merchandising and marketing economics and management.

Special group sessions will be devoted to automotive transportation and to taxation.

Terms of office of 35 members of the board of directors of the Institute expire at the time of the meeting. Nominations to fill all vacancies except those in the "At Large" groups are to be made by the Board of Councillors. Suggestions for nominations will be made by individual Councillors before Nov. 15 and actual nominations on the opening day of the meeting.

Following are the names of directors whose terms expire in December:

Pacific Coast Production, Mark L. Requa, San Francisco.

Rocky Mountain Production, B. B. Brooks, Consolidated Royalty Oil Co., Casper.

Central U. S. Production, W. C. Franklin, Tidal Oil Co., Tulsa; H. V. Foster, Foster Petroleum Corp., Bartlesville, Okla.; Frank Phillips, Phillips Petroleum Co., Bartlesville; J. Edgar Pew, Sun Oil Co., Dallas.

Eastern U. S. Production, O. D. Donnell, Ohio Oil Co., Findlay, Ohio.

Pacific Coast Manufacturing, E. W. Clark, Union Oil Co. of California, Los Angeles.

Rocky Mountain Manufacturing, T. A. Dines, Midwest Refining Co., Denver.

Central U. S. Manufacturing, P. M. Miskell, Empire Oil & Refining Co., Tulsa; John L. Gray, Shaffer Oil & Refining Co., Tulsa.

Eastern U. S. Manufacturing, Charles L. Suhr, Pennzoil Co., Oil City, Penna.

Rocky Mountain Distribution, E. T. Wilson, Continental Oil Co., Denver.

Central U. S. Distribution, H. B. Earhart, White Star Refining Co., Detroit.

Eastern U. S. Distribution, A. P. Coombe, Cleveland.

Tank Cars, Lauren J. Drake, Union Tank Car Co., Chicago.

Natural Gas, N. C. McGowen, The Palmer Corp., Shreveport.

Natural Gasoline, Edgar J. Marston, Texas Pacific Coal & Oil Co., Fort Worth.

Foreign Trade, Herbert L. Pratt, Standard Oil Co. of New York, New York; and E. L. Doheney, Petroleum Securities Co., Los Angeles.

At Large, J. F. Lucey, Lucey Petroleum Co., Dallas; E. W. Marland, Ponca City; Wallace E. Pratt, Humble Oil & Refining Co., Houston; R. C. Holmes, The Texas Co., New York; Thomas A. O'Donnell, California Petroleum Corp., Los Angeles; William N. Davis, Phillips Petroleum Co., Bartlesville; E. B. Reeser, Barnsdall Corp., Tulsa; H. F. Sinclair, Sinclair Consolidated Oil Corp., New York; F. A. Leovy, Gulf Oil Corp., Pittsburgh; J. W. Van Dyke, Atlantic Refining Co., Philadelphia and H. L. Doherty, H. L. Doherty & Co., New York.

In addition the terms expire of four of the nine members at large which are elected directly by the Board of Directors. These include, W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.; E. G. Seubert, Standard Oil Co. of Indiana, Chicago; W. M. Irish, Atlantic Refining Co., Philadelphia and John F. O'Donohue, Petroleum Producers Co., Wichita Falls, Tex.

Following is the tentative program for the three day meeting:

Tuesday, December 3

10:30 a.m. Meeting Board of Councillors. To nominate candidates for election as members of the Board of Directors.

2:30 p.m. General Session.

The President's Address. E. B. Reeser, Barnsdall Corp.

Report of Board of Councillors, and election of directors.

Common Sense in the Oil Industry. Sir Henri W. A. Deterding, Royal-Dutch Shell Companies.

The Automotive Industry. Speaker to be announced.

Wednesday, December 4

Morning

Group Meetings

10 a.m.

PRODUCTON PRACTICE.

Casing Stress Analysis and Deep Well Casing Practice in California. Clarence J. Coberly, Kobe, Inc.

Symposium on Straight Hole Drilling Practice. John Franklin Dodge, Secretary of the National Committee on Drilling Practice, will present the results of experimental drilling and summarize the papers and discussions at various district meetings held throughout the country during the past year. This will be followed by an open discussion of the subject.

REFINERY TECHNOLOGY: MOTOR FUEL.

Vapor Pressure on Gas Free Gasolines. O. C. Bridgeman, U. S. Bureau of Standards.

Fuel Volatility and Engine Acceleration. D. S. Brooks and C. S. Bruce, U. S. Bureau of Standards.

Standardization of Anti-Knock Testing. H. L. Horning, Waukesha Motor Co.

Gas-Locking Tendencies of Aviation Gasolines in Airplane Fuel Lines and Feed Pumps. C. C. Moore, Jr., and M. S. Reynolds, Union Oil Co. of California.

AUTOMOTIVE TRANSPORTATION.

A Basis for Retirement of Automotive Equipment. J. C. Bennett, Associated Oil Co.

Design of Six Wheel Trucks and Their Relation to Highway Problems. C. A. Pierce, Diamond T Motor Car Co.

Application of Semi-Trailers to Petroleum Industry Transportation. A. W. Kenerson, Standard Oil Co. (Ohio).

Motor Vehicle Records and Their Application. J. G. Moxey, Atlantic Refining Co.

Afternoon

Group Meetings

2 p.m.

PRODUCTION PRACTICE.

Symposium on Air and Gas Injection. R. C. Miller, U. S. Bureau of Mines, will present a summary of past and present practice on this subject, based on a questionnaire survey of the United States made by the Committee on Production Practice, E. O. Bennett, Chairman. The paper will be followed by an open discussion of the subject.

REFINERY TECHNOLOGY: CRACKING.

Some Recent Improvements in Pressure Cracking. H. L. Strout, Standard Oil Co. of California.

Principles of Vapor Phase Cracking. R. C. Osterstrom and C. R. Wagner, The Pure Oil Co.

A New Type of Cracking Unit. Luis deFlorez.

MARKETING PROBLEMS.

Marketing Economics and Management. Speaker to be announced.

Defining and Enforcing Trade Practice Codes. M. Markham Flannery, Director Trade Practice Conference, Federal Trade Commission.

The Code of Practices for Marketing Refined Petroleum Products. Speaker to be announced.

Delivering Automatic Heating Service. Speaker to be announced.

Evening
Group Meetings
8 p.m.

CORROSION OF EQUIPMENT.

Report of Sub-Committee on Refining and Marine Corrosion.

Pressure Still Corrosion. J. K. Roberts and W. G. Whitman, Standard Oil Co. (Indiana).

Practical Methods of Combating Corrosion in Oil Refining Equipment. R. L. Duff, Standard Oil Development Co.

Cause of Corrosion in Cracking Plants. E. Retaillian and F. R. Lang, Shell Petroleum Corp.

TAXATION.

The Increasing Cost of Government. F. E. Packard, Standard Oil Co. (Indiana).

The Motor Fuel Tax and Its Future. Speaker to be announced.

The Retailers' Tax Problems and How to Meet Them. Speaker to be announced.

The Tax Problem of the Producer and Refiner. Speaker to be announced.

Thursday, December 5

Morning
Group Meetings
10 a.m.

PRODUCTION PROBLEMS.

Power Correlation of Drilling Equipment. J. R. Gignoux, Shell Oil Co. Metallurgy of Drilling Equipment. H. W. Fletcher, Chairman of National Committee on Metallurgy.

Fundamental Research Project No. 25: Determination of Geothermal Gradients in Oil Fields on Anticlinal Structure. K. C. Heald, The Gulf Companies.

REFINERY TECHNOLOGY.

Some Properties of Mid-Continent Crude. Ogden Fitzsimmons and W. H. Bahlke, Standard Oil Co. (Indiana).

Studies of Distillation, Rectification of Heavy Naphtha. W. K. Lewis and E. R. Smoley, Massachusetts Institute of Technology.

Application of Thermodynamics to Chemical Reactions of Petroleum Products. A. W. Francis and R. N. Kleinschmidt, A. D. Little, Inc.

Dewaxing of Lubricating Oils, E. R. Lederer and R. Beattie, Texas Pacific Coal and Oil Co.

Manufacture of Bright Stock by Contact Filtration. R. D. Evans, Independent Oil and Gas Co.

NATIONAL CODE OF PRACTICES FOR MARKETING REFINED PETROLEUM PRODUCTS.

Note: This is an open and public joint session of the members of the National Committee on Interpretation of the Code, the six Regional Code Committees and the State and other Code Sub-Committees, which meeting all oil men engaged or interested in marketing refined petroleum products are invited to attend and to participate in the discussion.

The session will be devoted to: Obtaining reports of the progress made by the various committees in obtaining the signed acceptances of the Code by refining and marketing companies. Ascertaining how generally and effectively the companies are putting the Code into actual practice. Discussing the rules of the Code and the Interpretations thereof.

Afternoon
Group Meetings
2 p.m.

BUSINESS SESSION OF THE DIVISION OF DEVELOPMENT AND PRODUCTION ENGINEERING.

Report of 1929 Activities. John R. Suman, General Chairman.

Report of Committee on Drilling Practice. R. E. Collom, Chairman.

Report of Committee on Production Practice. E. O. Bennett, Chairman.

Report of Nominating Committee and Election of Officers for 1930.

Open Forum: General Discussion of Progress and Suggestions for Conduct of Divisional Activities During 1930.

REFINERY TECHNOLOGY—GUM.

Stabilization of Knock Rating, Gums and Color of Gasoline by Chemical Inhibitors. G. Egloff, W. F. Faragher and J. C. Morrell, Universal Oil Products Co.

Factors Affecting Determination of Gum in Gasoline. C. R. Wagner and Julius Hyman, The Pure Oil Co.

Some Phenomena of Oxygen Absorption Gum Determination of Motor Fuels. E. C. Herthel and Frank Apgar, Sinclair Refining Co.

CORROSION OF EQUIPMENT.

Report of Sub-Committee on Production and Pipe Line Corrosion. E. P. Bly, Chairman, Standard Oil Co. of California.

Aluminum and Its Alloys as Corrosion Resistant Materials in the Oil Industry. Stanley Gill, Gulf Pipe Line Co.

Long Line Currents. K. H. Logan, U. S. Bureau of Standards; Stanley Gill, Gulf Pipe Line Co. and J. F. Putnam, Standard Oil Co. of California.

Corrosion and Pipe Line Coverings. Charles Fitzgerald, Pure Oil Pipe Line Co. of Texas.

The Field Inspection of Protective Coatings for Oil and Gas Lines. Gordon N. Scott, A.P.I. Research Associate at the U. S. Bureau of Standards.

ANNUAL DINNER, 8 P. M.

Program to be announced.

Directors' Meetings

Scheduled meetings of the Board of Directors are called for December 2, 3, 4 and 5. Monday, Dec. 2, 2:30 p.m.; Tuesday, Dec. 3, Luncheon 12-2:00 p.m.; Wednesday, Dec. 4, Luncheon, 12-2:00 p.m.; and Thursday, Dec. 5, Executive Committee, Luncheon, 12:15 p.m.

Committee meetings scheduled for Nov. 30 prior to the opening of the annual meeting include the committee on oil pollution and the sub-committee (Group 1) on uniform tank measurements and gage tables.

Meetings of committees on standardization and other standing committees will begin on Dec. 2.

Nebraska Jobbers Change Dates of Meeting

LINCOLN, Neb., Nov. 5.—The ninth annual convention of the Nebraska Independent Oil Men's Association will be held at the Paxton Hotel, Omaha, on Dec. 11, 12 and 13 it was announced today by Charles M. Sutherland, secretary.

First announcement of the Nebraska meeting was for Dec. 4, 5 and 6. The change was made to avoid conflict with the meeting of the American Petroleum Institute.

Henderson Leaves Beacon To Join Busfield

BOSTON, Nov. 1.—Lester M. Henderson, for nine years with the Beacon Oil Co., resigned Oct. 31 to be vice president in charge of sales for the Busfield Oil Co. Busfield is a subsidiary of the National Service Companies, distributing domestic burner oils from Portland, Maine to New York.

A clock was presented to Mr. Henderson on Oct. 31 by F. F. Hale, general sales manager of Beacon, in recognition of his service. In 1923 Mr. Henderson started the tank wagon sales department, and in 1926 and 1927 he managed the service stations. For the past two years he has been working on jobber distributors. Prior to 1921 he was in the Boston office of The Texas Co.

Wrench, Packing, Reamer, Socket Yield $10 Ideas in Contest

By John Power
N. P. N. STAFF WRITER

TULSA, Nov. 4

IN AWARDING the prizes in the Fifth Class in the Field Men's Idea Contest, staged by NATIONAL PETROLEUM NEWS in connection with the International Petroleum Exposition at Tulsa, the judges were forced to make their selections from scores of suggestions, all of merit.

In this contest NATIONAL PETROLEUM NEWS offered $500 in 15 cash prizes for the most practical suggestions on new or improved drilling and producing equipment to come out of a study of exhibits at the Oil Exposition. Prize winners were announced in last week's NATIONAL PETROLEUM NEWS.

In making their ten selections in the fifth class, the author of each winning $10, Judges C. P. Dimit, general superintendent, Gypsy Oil Co., Tulsa; Charles Jacobsen, southern district superintendent, Barnsdall Oil Co., Tulsa, and John Power, NATIONAL PETROLEUM NEWS staff writer on production methods, were impressed with the variety of the suggestions and their practical nature.

$10 Idea No. 1

One of the suggestions to which a fifth prize was awarded was an improved fishing socket for removing broken strings of sucker rods from pumping wells. The award went to W. D. Lyles, farm boss for the Barnsdall Oil Co. at Mankins, Texas. He said, in part:

"From all appearances the socket has several times as much bearing surface as the old style. The strain is distributed more evenly than on the older types. This is true of the bowl as well as the slips. This feature should reduce the upkeep a great deal, as it eliminates swelling of the bowl or breakage of the slips.

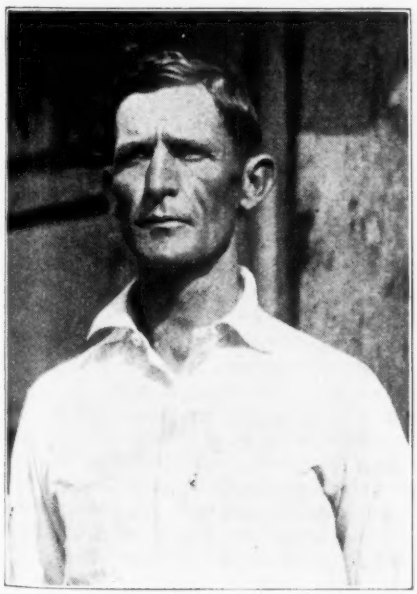
"The design is such that the bowl can be made heavier, as can the slips. It will stand as much downward stroke as it will upward stroke without wear or damage to the slips.

"The slip rests on a shoulder at the bottom of the socket, making it impossible to lose a slip in the hole. The construction of the slips will allow more pick-up for worn parts than will the tapered type of slip. The grasp of the slip on the fish is distributed throughout the length of the bowl, making it much more difficult to swell the bowl than if the fish were gripped at the extreme end. The bowl also appears to have more take up than on other types."

Exhibits Studied

IDEAS which are published in the accompanying article as winning prizes in the fifth class in NATIONAL PETROLEUM NEWS Field Men's Idea Contest were secured from a study of the following exhibits at the International Petroleum Exposition at Tulsa, Oct. 5 to 12.

Brust Tool Mfg. Co.; Smallamatic Co.; Baldwin Tool Works; Robinson Supply Co.; Happy Belting Co.; Norris Bros., Inc.; Safety Division, Mid-Continent Oil & Gas Association; Worthington Machinery Corp.; Baird Tool Co.; Safety Pulling Machine Co.; R. E. Worthington Co.



1) *J. E. Boxell, Shaffer O. & R. Co., winner of the first prize, $200, in National Petroleum News Field Men's Contest*

$10 Idea No. 2

Another suggestion, made by J. E. McCollum, district foreman for the Kewanee Oil & Gas Co. at Mounds, Okla., was for the flowing of small wells by artificial means. The device which Mr. McCollum suggests is an automatic, pressure controlled air or gas displacement pump. In suggesting its use on small wells Mr. McCollum said:

"Getting the production in this fashion takes less men than the more familiar pumping method, and requires less equipment. On farming land all surface equipment is easily buried, leaving nothing to interfere with the farming of the land, and operating the lease at the same time.

"On wells producing low gravity oil it should be especially desirable as there are no working parts to cut the oil and further reduce the gravity."

$10 Idea No. 3

Duplicate prizes had to be awarded to Orgle Cargill, roustabout for the Shaffer Oil & Refining Co. at Drumright, Okla., and to Joe H. Hinton, chief district clerk and assistant foreman in the Bartlesville area for the Barnsdall Oil Co. Both of these men suggested the improved shovel. Perhaps the best written of all the suggestions turned in, in the contest was that of Mr. Hinton, who began:

"While others are writing you of the rotaries, spudders, tractors and the many other wonderful pieces of machinery they saw at the Tulsa Oil

2) *H. H. Haper, Skelly Oil Co., winner of the second prize, $100 cash*

3) *W. J. Cox, Gypsy Oil Co., winner of the third prize,* $50

Exposition, I will confine myself to one of the more humble but nevertheless important implements. One that is used many times each day regardless of the location of the field.

"New stuff or old, deep stuff or shallow, go where you will and you will find the lowly shovel doing its part to make the wheels go round. * * * While this could not perhaps be considered one of the greatest money makers or savers, without doubt it has its place, for the nickels and the dimes saved, or wisely spent, make dollars, and dollars make dividends."

$10 Idea No. 4

Watson Bettis, Drumright, district superintendent for the Gypsy Oil Co. took down a prize for his suggestion of the counterbalance which it easily and quickly removed when it is necessary to work on the well. He said:

"The counterbalance consists of a series of weights built up on the belt house side of the crank. It is applied where the calf wheel ordinarily goes. Long heavy bolts are run through the weights to hold them in place.

"The counterbalance is applied to the crank by a bronze lined housing, keyed to the shaft. The clutch, which is one of the most important features, has two straight and two tapered jaws. To disengage the counterbalance all that is necessary is to loosen two bolts which hold the jaws engaged and to make up on a set screw which applies a pushing, or separating force between the fixed and movable parts of the clutch. The outer or movable part of the clutch rides back on the set screw, freeing the weights from the shaft."

$10 Idea No. 5

Suggesting the use of the endless belts and automatic idlers brought a prize to J. E. Rogers, pumper for Skelly Oil Co. at Iowa Park, Texas, and to W. C. Milam, farm boss for the Minnehoma Oil & Gas Co. at Cleveland, Okla. Quoting from the suggestions turned in by both of these men, they said in part: "The features of the idler provide enough travel to care for any stretch in the belt and precludes the necessity of ever cutting the belt. The automatic feature of the idler maintains the proper tension on the belt at all times, varying with the load, and with weather conditions.

"One money saving feature is the need for less labor. No extra men besides the regular pumper are required to put the clamps back on the power belt, and to put the belt back on the pulleys, as the absence of clamps will stop a lot of belt trouble, and also a lot of down time."

$10 Idea No. 6

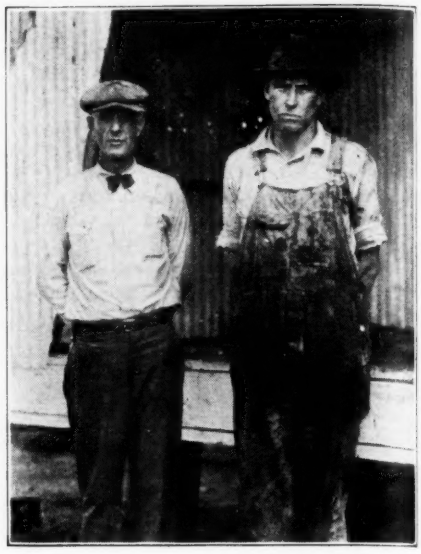
William Winesburg, district foreman for the Barnsdall Oil Co. at Bristow, Okla., found a tool at the Exposition which he was sure would solve a problem on one of the leases in his charge. In particular, one well, he said, has the standing valve mudded up. The tubing is run on a packer to keep the water off the face of the sand. Attempts have been made to pull the tubing, but they have failed, because of the packer's being stuck fast, and it was feared that too much pulling on the packer would part the tubing.

Mr. Winesburg found a spiral standing valve tap which will go down through the settlings in the barrel, and make it possible to pull the standing valve. And this of course, means saving the well, which, though it may be only a stripper, is nevertheless, worth the saving, if it can be done economically.

$10 Idea No. 7

Thomas J. Mitchell, Shaffer Oil & Refining Co. roustabout, found a circular wrench for making up sucker rods which had become parted in the well. The ordinary practice followed in such instances is to put a Number 24, or 36 wrench on a sub which has been put on the rod string, and to walk it around until tight. The slack is then bumped off, providing of course, that the wrench hasn't got away from the men handling it, and smacked one or more of them clear off the floor.

The circular wrench makes this operation some easier and a whole lot safer to perform. Mr. Mitchell says, "The circular wrench is one of the best safety features which I have seen for the men who work on pumping wells. About 36 inches in diameter, in the form of a wheel, the wrench slips onto the box of the sub, being held in place by a key which goes through the slot provided for the rod box. It is possible to walk the wrench around without danger



4) *W. H. Danforth, Shaffer Oil & Refining Co., whose interest in his men's getting all they could out of the Exposition accounted for their taking three of the* 15 *prizes. He won a* $10 *prize. On his right Orgle Cargill, Shaffer roustabout, who also won one of the fifth prizes*

of its coming off, or getting away from the men doing the work.

"There is a very considerable risk attached to screwing up parted rod strings which this wrench does away with. If the wrench does get away from the men doing the work there is no way for it to hurt anyone, as it can not come off, nor can a man get his arm, side, or leg in the way of the spokes, as the rim acts as a guard."

$10 Idea No. 8

J. E. Drawbaugh, who runs a stationary engine in a Shell Petroleum Corp. gasoline plant at Avant, Okla., was bothered by air leaks getting into the packing of the shafts in his centrifugal circulating pumps. This caused the pumps to lose their prime, and to handle less fluid than they should, which meant that the engines and compressors could not operate at the proper efficiency.

He went around to manufacturers of centrifugal pumps, and, by asking their advice, discovered a new packing, and a new way of cutting that packing which would go a long way toward solving his problem. And the solution of such a problem as this means money saved to the company operating the equipment.

The packing was made of tin, graphite, and a binding compound. The tin will not cut the steel shaft, the graphite acts as a lubricant, and the whole has sufficient elasticity to seal the shaft properly against leaks.

By cutting the ends of the packing on the bias, the small wedged-shape hole left when the ends of the packing are brought together is placed next the shaft. The shaft rotates so fast that it effectually seals the opening.

$10 Idea No. 9

W. H. Danforth, Shaffer Oil & Refining Co., Shamrock, Okla., whose interest in his men's getting all that they could out of the Exposition was largely responsible for the excellent showing that they made in the contest, found and suggested a wrist pin hole reamer, used in conjunction with a tapered wrist pin hole reamer, which he was sure would prove a money saver to his company. He said:

"The reamer is centered by a guide and then bolted directly to the front of the crank. The cutting pin is then inserted in the boring bar and set to ream the wrist pin hole to the desired diameter. The boring bar is operated in a similar fashion to the old man drill. An expanding sleeve, or bushing, is used in conjunction with tapered wrist pin to give a snug fit in the new hole.

"The money saving feature of the device lies in its ability to keep crank arms in service longer, and with less down time for repairs. When a wrist pin works loose the hole becomes worn at the outer end, which causes the pin to wobble and break off. The home-made method of bushing with a piece of tin rarely does any lasting good, and the hole soon becomes ruined.

"Often it is necessary to continue pumping the well with the pin in the same number hole to get the proper stroke, so that, unless the hole can be repaired, it is necessary to shut down, and replace the crank arm, either with a new arm, or with one swapped from some other well. This means a considerable loss in time, production and money."

$10 Idea No. 10

Finding a cleaning out attachment for a pulling machine which he felt would do the work in his district brought another $10 prize to J. W. Williams, district superintendent for the Barnsdall Oil Co. at Barnsdall, Okla.

"For instance," said Mr. Williams, "we have wells in which we often find 10 or 15 feet of mud after we have pulled tubing. With this machine we could easily and cheaply bail them out, thus saving many a cup job. It is not my thought to raise the production in this way, but to get what we do get at less cost, and more regularly, which would, in the long run be raising the production.

"We could save a great deal of down time which is now taken up in pulling rods and tubing if we could keep these old wells clean at little expense. Little good has been done to these old wells when they have been cleaned out with the more expensive methods, but the cleaning has resulted in fewer pulling jobs.

"If the pulling jobs can be done cheaply enough, the reduction in expense will justify the cleaning."

The list of prize winning suggestions by no means covers the scope of those turned in. They were selected by the judges because, in their opinion, the suggestions made showed that the men making them had studied the equipment on display at the Exposition with an eye to finding something which would be of direct benefit to the companies employing them, and had found a direct use for what they saw.

The fact that some equipment displayed was left out of the list from which the prize winning suggestions were made does not imply any lack of merit in that equipment. Rather, the suggestions showed that the men turning in ideas based on this equipment had not pictured its use in their own jobs, or throughout their company's operations as clearly as had those men whose suggestions or ideas won prizes.

Plan Campaign to Reduce Outage Claims on Natural Gasoline

Staff Special

TULSA, Nov. 2.

A PROGRAM of publicity and discussion with a view to eliminating the present practice with reference to allowing outage under any and all conditions has been undertaken by the outage committee of the Natural Gasoline Association of America. Emby Kaye, of the gasoline department, Skelly Oil Co., Tulsa, is chairman of the committee.

The matter already has been taken up with the traffic committee of the association, and indications are reports from these two committees will be made within a short time to the board of directors. The outage committee in bringing the matter before the attention of the traffic committee wrote in part: "At this time the committee is on record as favoring some association publicity directed to discouraging outage in general and suggesting ways and means of reducing same. If your committee desires information with respect to tank car improvements, we shall be glad to tell you what we know about them. We should like to have your conclusions in order that we may prepare our report to the board of directors, at whose instance these discussions have been undertaken."

Mr. Kaye in discussing the present plans said that for a number of years the outage committee of the association had met annually, discussed the outage evil, declared the time was not propitious to make recommendations looking to its eradication, and adjourned.

"Your chairman believes," Mr. Kaye wrote the outage committee recently, "that there has been a marked advance in the technique of our business during the last few years, and that in the light of our greater knowledge of our product, the present practice with reference to allowing outage under any and all conditions is not only to be condemned, but must be outlawed. . . .

"Undoubtedly the present archaic outage practice is inherited from the era when natural gasoline had no particular specifications, except that it was uniformly wild. Prices were unusually high and the refiner was not prone to 'pay for froth which he could not get into his naphtha.' While he did not know what he was buying or what he received, he knew he was safe if he weathered a car of 'casinghead' until the wildness was gone.

"He bought gasoline, and what he finally unloaded was gasoline. No grade was in the scheme. There was no different sale value attached to the weathered material as against the raw product that arrived at the buyer's unloading rack.

"Even if the material arrived at the rack shell full, the tank car did not make possible the sampling and unloading of the gasoline without removal of the dome cover. The removal of the cover inadvertently brought about weathering—the chief source of outage. The refiner, by this practice, always obtained a weathered gasoline at the expense of the manufacturer, whose clinging to the old-fashioned tank car made him a willing victim."

Mr. Kaye pointed out in his report that due to the application of rectification and to new methods of gasoline analysis, "there is every chance that a buyer can, without recourse to weathering, receive a given product, test same, and transfer the car's contents to storage or to a blending pump."

"The refiner should indeed not pay a penalty for buying butane-packed gasoline," Mr. Kaye stated, "if the manufacturer does not provide a tank car equipped to gage and unload without opening the dome cover. Such devices are available and can be paid for in the outage saving made on several car loadings."

Some of the present outage claims are checked back to the sales managers, for instance:

"Sales managers have heretofore been reluctant to change outage practice when demand and price were good, because they did not want to antagonize the buyer; and when gasoline did not move, they thought it poor policy to add 'fuel to the fire.' Besides, at low market prices, the outage did not run into high figures."

Cooperate in Devising Standard Method Of Taking Tank Car Temperature

By Allen S. James
N. P. N. STAFF WRITER

TULSA, Oct. 31

THE Western Petroleum Refiners Association has been asked to cooperate in the work now under way in the oil industry to devise a standard method for taking temperatures of tank cars, which is accurate and practical and can be used by marketers as well as the laboratory staff of the refineries.

The meeting of refinery operators at Tulsa, Oct. 28 and 29, sponsored by the Manufacturers' Committee of the western refiners association, by resolution asked the parent organization to appoint a committee to work with the present American Society for Testing Materials committee considering this subject.

This action followed the reading of a paper by H. T. Bennett, chief chemist for the Mid-Continent Petroleum Corp., on "Importance of Correct Temperatures in Tank Car Loading." Mr. Bennett's paper is published on Page 57 of this issue.

General attention of the industry to the variety of methods used in taking tank car temperatures, of gasoline particularly, and the resulting differences between buyer and seller, was first brought about through two articles published by NATIONAL PETROLEUM NEWS in its Aug. 28th and Sept. 4, 1929, issues.

The need for a uniform system of cost accounting for skimming and cracking plants was discussed at the Tulsa operators' meeting also, following presentation of a paper by C. E. Votrain, assistant treasurer of Barnsdall Refineries, Inc., on "Refinery Cost Accounting." By another resolution, the president of the Western Petroleum Refiners Association was asked to appoint a committee to work with a committee from the Petroleum Accountants Association on this subject. Mr. Votrain's paper is published on Page 64 of this issue.

L. R. Crawford, president of the Producers & Refiners Corp., chairman of the manufacturers committee, presided at the sessions and led several of the discussions. The paper by Mr. Votrain developed considerable discussion. As Mr. Crawford stated, it seemed the refinery operators were getting away from the "barrels and gallons" thinking and were taking up the "dollars and cents" method of thinking.

Mr. Votrain had worked out a complete and simple method for recording costs at the request of the committee. He stated that his system was not presented as one which would cover all cases, but primarily for discussion.

There was considerable difference of opinion as to the manner in which to handle obsolescence, and the cost of changing equipment and dismantling. The majority apparently were of the opinion a reserve should be set aside, the amount of this reserve being determined from past experience and good judgment on the part of the refinery operator. This reserve should be determined before the equipment is placed in use.

Another point of discussion centered around the determination of what commodities should be counted as by-products. Mr. Votrain said that, if a refiner was cutting primarily for gasoline, that commodity should be considered the main product, and the kerosene, distillate, gas oil and fuel oils and other commodities should be counted as by-products and the profit realized from them be checked against the cost of the raw material.

As an example he cited the case of a company making cabinets. The company's lumber, for instance, cost $3 for each cabinet, but in cutting the lumber, a small piece was left over, which the company could sell for 25 cents. The 25 cents, he said, should be deducted from the $3 cost for material put into the cabinet, in determining the cost of the finished product.

Considerable interest was shown in the paper by C. R. Wagner, chemist for the Pure Oil Co., Chicago, on "Vapor Phase Cracking." Mr. Wagner's paper was published starting on Page 172, Oct. 30th issue of NATIONAL PETROLEUM NEWS. Yield naturally was one of the first points raised in the discussion. Mr. Wagner said that at present his company was getting from 55 to 65 per cent gasoline distillate which, on rerunning, yields from 50 to 55 per cent gasoline of 420 end point.

A revision in treating whereby dilute acid is used has increased yield, Mr. Wagner said. The cost of treating roughly was 2 cents per barrel, and the gasoline remains stable in color for three to six months. The more drastic the treating, Mr. Wagner said, the lower the anti-knock value, but a 25 to 30 color can be obtained with a loss of only 2 to 3 per cent in benzol equivalent. The acid treated gasoline distillate of course has to be rerun, he explained.

Another point raised was the amount of loss in the vapor phase system. Mr. Wagner said that usually the company has a slight gain due to the change in specific gravity

A meeting of old friends had just taken place when the above picture was snapped. Col. George A. Burrell of Pittsburgh (left) was just leaving the Mayo hotel as A. M. Ballard, division manager for the Sun Oil Co., Tulsa, entered the lobby

of the products. The cost of operating the system at first was 10 to 25 per cent higher than the cost of operating a liquid phase unit, Mr. Wagner said. At present, however, the costs are about the same, and indications are that within a year the costs of operating the vapor phase system will be from 10 to 25 per cent less than the liquid phase units.

The yield, Mr. Wagner mentioned incidentally, is expected to be increased to around 70 per cent gasoline as soon as experiments which have been conducted are adapted to the units. This auxiliary equipment will convert approximately 30 per cent of the fixed gases into good motor fuel by polymerization.

The coke problem is comparatively simple since driers for the gases have been installed in the converters. Before these driers were installed the Gyro units had an operating cycle of only 14 to 16 days. At the present time the units are operated 30 to 60 days, and when the drier tubes are cleaned about a bushel basket of coke is removed.

Earl Petty of the Smith Engineering Co. read a paper on "Vacuum Distillation" at the refinery operators' meeting

"What is the hazard of the Gyro process?" was one of the questions asked Mr. Wagner, who replied that so far they did not know, and that only time would tell whether or not there was a hazard.

Col. George A. Burrell, in the course of the discussion in connection with his paper on "Pressure Distillate Stabilization," stated that it was his opinion that auxiliary equipment would be perfected to the point where there would be virtually no need for the ordinary vapor recovery system, and that piece of equipment would become obsolete. The paper presented by Mr. Burrell was published starting on Page 60 of Oct. 30th issue of NATIONAL PETROLEUM NEWS.

These men are a part of the Producers & Refiners Corp. operating personnel. Left to right, they are: Peter Vilkas, chief chemist, and John Cutter, refinery superintendent, West Tulsa plant, and J. A. Sartori, general manager in charge of refinery operations

The paper by Earl Petty, of the Smith Engineering Co. on "Vacuum Distillation" also developed considerable comment and discussion. Vacuum distillation, Mr. Petty said, had little effect on the gravity of the bright stock. The overhead product would be only 1 to 1½ degrees higher than a residue bright stock made from the same crude. There also is no unusual difficulty in dewaxing an overhead stock for low cold test motor oils with the systems already in use at the average plant, Mr. Petty said. Mr. Petty said the theory now was that the flash differences in bright stocks were due primarily to the presence of asphalt in the crude. This theory was advanced, he said, when experiments were made by introducing various percentages of asphalt in pure paraffin base crudes.

Peter Vilkas, chief chemist at the West Tulsa refinery of the Producers & Refiners Corp. read a paper on "Determination of Gum in Gasoline" in which was outlined some experiments made in his laboratory. Mr. Vilkas explained the paper was presented merely to give the results without an attempt to draw any conclusions.

"Analysis of Natural and Refined Gases," a paper presented by Dr. W. J. Podbielniak of Tulsa, was illustrated with slides. Doctor Podbielniak has perfected an apparatus for the analysis of gases, and the results he has obtained were given in a series of charts and graphs which had been transposed to the slides.

The process as outlined by Dr. Podbielniak uses fractional distillation. The analysis of cracked gases was of especial interest. Hydrogen, acetylene, ethylene, propylene and butanes which are contained in the cracked gases can be analyzed as well as the more prominent hydrocarbons contained in natural gases and gasolines. A single analytical distillation is all that is required for the determination of the various gases, and the more refractory gases are easily handled by the fractional distillation which breaks up gases into a series of comparatively simple fractions.

C. R. Wagner, chemist, Pure Oil Co., (right) has just told Al Jameson, of the Tulsa office, a corking good golf story. (Story on request)

Application of Vacuum Distillation To Producing Lubricating Oils

By Earl Petty*

(Presented before Western Petroleum Refiners Association, Tulsa, Oct. 28 and 29)

FOR a number of years the application of vacuum distillation to the production of lubricating oils has attracted the attention of the refinery technologists and the equipment manufacturers. However, it is only within the past year or two that the refiner himself has become interested.

The tardy development of this interesting process may be attributed to the lack of proper appreciation of the refiners' problems on the part of many of the equipment manufacturers and also to the market conditions. During the past few years the decrease in the amount of green crude available as compared to market demands in the Mid-continent area, the desire for decreased operating costs, and the ever increasing demand for oils of high physical properties has focused the attention of the refiner on this subject.

This process has interesting possibilities for every manufacturer of lubricating oils, whether he is processing paraffin base oils or asphalt base oils or the so-called mixed base crudes. Naturally, the procedure for handling these rather distinct crudes differs somewhat. In this discussion we are pre-supposing the use of pipe stills provided with efficient fractionating equipment and it might be well to comment that the development of this combination equipment has been a vital step in bringing the present systems of vacuum distillation into such prominence and favor. A typical arrangement of such a unit is shown by the accompanying flow sheet.

The general plant arrangement and method of operation follows:

A reduced crude representing approximately from 40 to 50 per cent of the whole crude is pumped through a system of heat-exchangers to the pipe still, where it is heated to the temperature to vaporize the desired distillate products.

Great care should be taken in the design of the pipe still so that the temperature of the oil film next to the tube wall is held within a very few degrees of the average temperature of the oil stream. Otherwise the purpose of the system of operation will be defeated. After leaving the pipe still the hot reduced crude is flashed into the vaporizer section of the fractionating column in the presence of steam.

The vaporized portion ascends the rectifier section of the tower, where it is counter-currently contacted with reflux supplied at the top of the column, thus removing the undesirable heavy asphaltic materials of higher boiling range. The overhead vapors enter a tubular condensing system, so designed as to condense the oil in two portions.

The separation realized by fractional condensation is usually sufficiently close for the products being handled. The more viscous lubricating stocks are taken as side drawn streams. Only one stream is taken where paraffin crudes are being handled but two or more such streams may be taken when asphaltic oils are being distilled. The asphaltic bottoms are counter currently stripped with super-heated steam in the stripping section of the tower.

WHERE paraffin base crudes are being processed, the light ends down to and including part of the gas oil are removed by steam-atmospheric topping units and the reduced crude, containing the wax distillate, the highly viscous fractions, and the tar, is charged directly to the vacuum pipe still and flash vaporized in the vaporizer section of the tower. The wax distillate and the high viscosity stock are vaporized and pass upward into the rectifying section of the tower where they are closely fractionated by virtue of being passed counter flow to wax distillate reflux which is pumped in at the top of the tower over the fractionating plate and bubble cap system.

The wax distillate passes from the top of the column in the vapor form and the vacuum refined stock is taken as a side drawn product.

The unvaporized bottoms, along with the high boiling range liquid from the rectifying section, flow down through the stripping section in counter flow to the superheated steam introduced at the bottom of this section, thus removing the last traces of the valuable viscous oil materials and at the same time lowering the vaporizer temperature required to vaporize the stocks and wax distillate.

The wax distillate as handled above, is directly pressable without further processing or redistilling and can be produced in practically any viscosity desired by manipulation of the amount of gas oil removed by partial condensation. When handling pure paraffin or mixed base crude and making a vacuum refined stock of from 150 to 160 viscosity at 210 degrees F. as a side drawn product, the end point of the whole wax distillate cut will not be too high and will not carry inhibiting materials which will prevent pressing. It has been demonstrated in commercial units that this material can be pressed in viscosity range as high as 120 seconds at 100.

Determination of the viscosity of the pressing stock is made by the following conditions:

The lower the viscosity the higher the rate of filtration or pressing but entails a liquid burden of gas oil which makes a fluid burden for equipment, added refrigeration and redistillation plant load.

The higher the viscosity of the wax distillate, the lower the filter press rate, but reduces refrigeration requirements, gives higher yield of viscosity material from material chilled and pressed and requires less redistillation capacity. If a plant has limited filter press capacity but plenty of refrigeration then a low viscosity wax distillate would be most practical. If a plant has excess filter press capacity but limited refrigeration a more viscous material might be pressed.

A DEFINITE trend is to make a more viscous wax distillate, viz. 80-90 viscosity for straight pressing and also to make even a 100-120 viscous stock and then dilute with a less viscous material such as naphtha or light gas oil to reduce viscosity and increase flow rate through presses, but at the same time bring in the minimum fluid burden.

The viscosity of the vacuum refined overhead stock may be varied in viscosity from 90 seconds viscosity at 210, to 160 viscosity at 210. Through this range the stock can be readily dewaxed by the centrifuge, filter-aid or selective solvent method. The plan

*Smith Engineering Co.

of dewaxing a whole heavy lub overhead stock similar in range of viscosity to long residuum is much more easily carried out than on long residuum stock. The viscosity of the stock to be processed is determined by the equipment available and the products it is desired to produce.

For example, it has been found in the production of zero cold test motor oils, a neutral and bright stock can be made from a stock from 90 to 110 viscosity at 210 most economically. The determination of the viscosity of the material to be dewaxed by combination pressing and centrifuging revolves around the capacity balance of the equipment available, the value of light non-viscous neutrals. This will determine the relative cost of the two methods.

By centrifuging a 90 viscosity vacuum refined stock, the dewaxed material can be broken up into a heavy neutral and a conventional bright stock by means of a rerun unit, and by this method all the 300 viscosity or even the 250 viscosity at 100 degrees F. neutral will have been dewaxed by the centrifuge operation. This leaves all the lower viscosity wax distillate to be pressed or charged to cracking material. If a whole wax distillate is pressed for 300 viscosity neutral only, and the total cost of the operation charged to this single material, it will make the pressing cost higher than that of centrifuging in a long vacuum refined overhead. Needless to say, it is impossible to centrifuge a 300 viscosity wax distillate alone but a material similar to the conventional long residuum can be centrifuged.

In Europe, in 1923, the writer successfully centrifuged on full scale size operation an 80 viscosity overhead stock make on BKM (Brunen Koenigsfelder Machinenfabrik) equipment. This product was made on a battery of continuous stills which were operated with only partial condensing-fractionating equipment under absolute pressure of 45 to 65 m/m of hg. Since that time I have had great enthusiasm for the process of dewaxing overhead stocks and we are just about to see the acceptance of the method in this country by the use of equipment which offers every reason for giving improved results.

BY THE filter-aid method which is just now being given new life due to certain process details and improvements, and due to the backwardness of centrifugal engineers to tackle the dewaxing of these overhead stocks, especially the longer cuts, an entirely new problem on the economics of dewaxing is facing us. It offers the advantage of being a little less critical of control as to nature of stock being handled, less dilution is required, less delicate chilling process, less refrigeration due to less diluting material and closer gap of cold test and temperature. Its handicaps are that it involves more process and mechanical details. Solvent methods of dewaxing are always being demonstrated on a commercial basis independent of filter ai process and centrifuge process.

Regardless of dewaxing process, the overhead stock as produced by this method is a narrow range boiling material which has been fractionated under conditions which prevent cracking and it possesses physical characteristics decidedly different from those of a residual product. The initial boiling point may be rather closely regulated and there are sufficient plates to produce a closely fractionated product, passing all coloring matter or asphalts of higher boiling range into the pitch drawn from the base of the tower.

BY THIS method we obtain a maximum flash-viscosity relationship and extremely light colors. Stocks prepared in this equipment usually have from 30 to 50 degrees higher flash for a given viscosity than a residual stock produced from the same crude. The color of the material directly off the tower will be found to be practically the same as that of a well treated residue stock after being processed with from 35 to 40 pounds of acid per barrel by the conventional treating method. It will be noted, of course, that this vacuum refined stock will have considerably higher cold test than even the acid treated stock. This does not mean that a larger per cent of wax is segregated into this cut but indicates that the waxes are not dissolved or hidden in excessive inhibiting coloring material. It will be found that the cold test is more nearly the same as that of an acid treated and filtered residual stock.

The vacuum refined overhead stock carried a balance between coloring matter and the higher boiling waxes in such a form that the wax is free to be precipitated by normal temperature effect as is indicated by the high cold test of the product, this ranging from 75 to 100 degrees F. This is due to the fact that this carefully fractionated material carries no high boiling coloring matter or asphalt, or coloring matter which has been rearranged into lower boiling ranges by the cracking and by catalytic effect of asphaltic materials in the pitch at elevated temperature. These materials exert a colloidal solvent effect on waxes, making it impossible to dewax by mechanical means.

It is also necessary to have a product stripped of the light end materials that tend to accelerate crystalline wax growth, and to remove materials from the heavy end which tend to dissolve and cover up the waxes. The results are accomplished in this new equipment hook-up and the stocks can be diluted and chilled in the conventional manner and dewaxed without further treatment or filtration. Treatment and filtration may follow the dewaxing operation to make finished color products. The pitch bottoms produced contain no coke or suspended carbon and are readily soluble in any of the lighter cuts or fuel oil and can be disposed of by blending and selling as fuel. This, of course, decreases the amount of acid sludge.

Asphaltic Base Crudes

It is rather difficult to outline a definite procedure for handling asphaltic base oils as it is dependent to such an extent upon the characteristics of the crude itself. When paraffin oils are being processed it is a constant fight to recover as many viscous units as possible but in the case of asphaltic base oils the real battle is to obtain a good flash and fire and lower the viscosity.

Due to the absence of waxes and the excessive amounts of coloring and unstable materials, the problem becomes that of distillation, fractionation and acid treating. The simplest procedure is to reduce the crude in a separate topping still and then charge to the vacuum unit, where it is fractionated directly into two or three separate cuts such as a neutral, a motor oil, and a bright stock, residuing the pitch material. Each of these cuts must be refined or treated separately to make marketable products.

This brings in a complication in tower design where so many side streams are drawn due to plates required and the attendant pressure drop, making it necessary to operate the vaporizer section of the tower at a higher pressure than when making only one side drawn material. This of course raises the temperature condition.

RECENT work carried out in Germany indicates that stocks distilled at too high a temperature in the presence of their asphaltic materials suffer some decomposition due to the catalytic action of the asphalt. The other alternate of distillation is to charge the reduced crude to a vacuum unit similar to that used on paraffin base oils and make a total lub cut similar to the total wax-lub cut and then treat as a whole unit following with a rerun unit to make the required fractionation. This offers the disadvantage of there being a possibility of following even this last distillation by some treatment for final stability.

Since by vacuum distillation and best fractionation it is impossible to remove all coloring material, some chemical treating of the vacuum refined stock is required. This is accounted for by the fact that, from a vapor phase to a condensate, some of the coloring material is of the same condensing temperature range as the lub cut. However, after once condensing, if redistilled it will be found that the coloring matter present in the liquid being heated and changed back to the vapor phase again is of a higher boiling range and can be made

a residue by the same equipment and method, i.e. by boiling range difference.

It is the theory of the writer that this rearrangement of boiling range is caused in the primary distillation, even though carried out under the reduced temperature of high vacuum, by the catalytic effect of the coloring material and, had the asphaltic material concentration been reduced by some quantative removal method, less rearrangement would have taken place. Also that, parallel to rearrangement of coloring material found in this case, a rearrangement of the lub materials also was effected. This in the writer's opinion explains the main difference in characteristics between lubs made from mixed base crudes and from paraffin crudes. Therefore the removal of coloring materials quantatively by chemical means will best prepare an oil for fractional distillation, whether by vacuum or by steam atmospheric. Of course, if very high boiling range fractions are to be prepared vacuum distillation will be necessary to reduce temperatures and prevent cracking.

Summary of Results

As indicated above vacuum distillation coupled with fractionation offers many interesting features. The trend of vacuum distillation today is so closely coupled with fractionation that it is difficult to decide to which to give the most credit. Personally, I think the fractionation equipment has put the process over. But the combination explains the progress being made, whereas vacuum distillation as previously known had made little progress.

For the credit of fractionation the following stock gives an example: A Pennsylvania topped crude was charged to a vacuum unit and gas oil and wax distillate taken overhead. A side stream of 65 viscosity at 210 degrees F., 505 flash was taken and centrifuged. This left a residue stock of 152 viscosity at 210 with 590 flash. Similar stocks made by conventional methods without fractionation were of 450 flash for the 65 viscosity and 540 flash for the 150 viscosity.

Another example may be found in a Louisiana crude fraction of 65 viscosity at 210, 635 at 100 degrees F., with a flash of 430.

Take the case of Black Mid-Continent crudes as a source of raw material, using for example Seminole or Kansas crude, approximately 13 per cent of 520 flash 150 viscosity vacuum refined stock can be made, or 10 per cent of 540 flash, 150 viscosity or 8 per cent of 560 flash, 150 viscosity can be obtained.

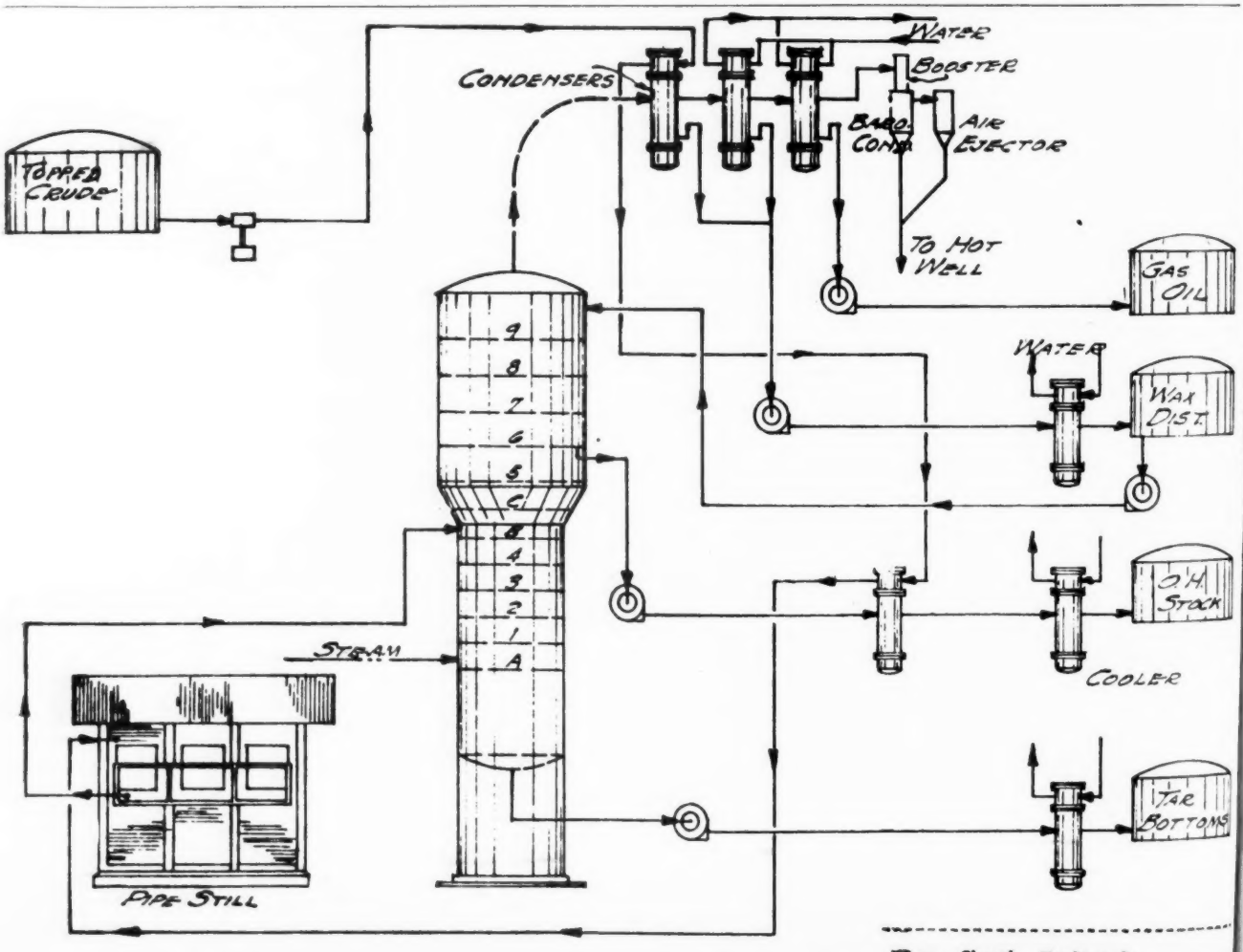
To finish bright stock of from 7-8 N. P. A. color the vacuum refined stock will require from 6 to 8 pounds of 66 commercial H_2SO_4 per barrel and require slight straining of 4 to 6 pounds of clay per barrel for neutralization and de-blooming.

To finish bright stock of 5-6 color from 20 to 24 pounds of acid will be required and from 4-6 pounds of clay per barrel for neutralizing and de-blooming.

Wish to explain that the above mentioned quantity of clay is required for neutralization only and, when put on an acid oil that has been treated by the centrifugal method of separating sludge, there is no pepper to remove and to accomplish the neutralization only slight heating is required to cause a further break between the oil and any dissolved acid that remains. This gives further decolorization but the primary use is in the neutralization.

It is readily seen that, with the general application of vacuum distillation, vacuum refined stocks will be obtainable from all black crude bottoms, and this new product will be of equal or better characteristics than our present treated steam refined stocks from green crudes. This might immediately be interpreted to indicate that the advent of vacuum distillation means the same thing in the lube industry that cracking did to the gasoline business 10 years ago.

(*Continued on Page* 89)



Flow Chart Number 1.

Stabilization in Texas—New Mexico Regions Still Holding

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Nov. 1

STABILIZATION of crude oil production in the Texas-New Mexico territory continues functioning satisfactorily, notwithstanding that the last 10 days has been a period in which wrinkles had to be ironed out of a threatening situation.

In East Texas, where Pure Oil Co. recently made its Van Zandt county discovery[1] of an important new field, operators are reported to have completed details of a joint development program that will insure orderly drilling. The tentative draft of the program is said to lack only the official approval of interested operators to make it effective.

Purchase of a three-acre tract adjoining the inland town of Van, 1200 feet southeast of the discovery well, was made by the Pure Oil Co., eliminating a threat of competitive drilling to come from this "key" leasehold previously owned by the Roberts Oil Co., of Breckenridge. The consideration paid for the tract was not made public.

Pure Oil Co., which is to carry on operations for the account of itself and other companies adjacent to the Van Zandt discovery well, is credited with owning 85 per cent of the productive ground in the field.

Other operators owning Van field leaseholds include the Shell Petroleum Corp., Sun Oil Co., The Texas Co., and Humble Oil & Refining Co.

The discovery well of the field is still flowing approximately 265 barrels daily from 9¼-inch hole at bottom, through one-half inch choker, under 50 pounds pressure.

In the Darst Creek area of the Luling fault zone territory, Caldwell and Guadalupe counties, central south Texas, a threatened resumption of development continues in abatement. Whether competitive drilling will break out shortly could not be measured with accuracy at the end of the week, but, at least, the danger is potential rather than actual for the present.

The Darst Creek area is the spot southwest of Luling where The Texas Co., several months ago, brought in its Dallas Wilson discovery and a north offset from the Edwards lime producing horizon at approximately 2700 feet. The two wells have been allowed to produce about 1500 barrels daily, other operators than The Texas Co. refraining from present development.

More recently, two wells belonging to the Simms-Penn interests and Magnolia Petroleum Co., upwards of five and four miles northeast, respectively, have been good for 940 and 3500 barrels, initial production, from an upper producing horizon.

The Hobbs area of Lea county, New Mexico, constitutes less of a problem to operators, notwithstanding the attitude of the land commissioner at Santa Fe, who is on record against permitting an organized curtailment program.

As previously reported in this periodical, Austin D. Crile, land commissioner of New Mexico, expressed at a meeting of Hobbs district operators, his position that the state of New Mexico could not approve the halting of operations in the face of limited production now failing to represent more than a small part of that commonwealth's consumption of products.

About a dozen state leases in the Hobbs area will expire within the next 12 to 15 months, so that drilling to perpetuate them by discovery of oil or gas will be continued under the "orderly program" Commissioner Crile announced he favored.

The fact that the state of New Mexico will insist on continued development in the area need not be considered as too seriously affecting stabilization work of the petroleum industry in the Hobbs area of the Permian salt basin geological province. It means that steady and continued drilling will go ahead rather than that there should be frenzied competitive development and exploitation.

That the marketing of potential production already indicated in the Hobbs area will be sought was also indicated in the commissioner's statement when he said "it is the hope . . . that the common carrier pipelines shall, in due course of time, be prepared to receive oil developed on state leases."

At present, pipelines of the Texas and Humble companies serve the Lynch well area, central western Lea county, and the territory adjacent to Jal, southern Lea county, respectively. Oil in the Hobbs territory, where the Midwest Refining Co.'s discovery well was drilled more than a year ago, has been run to lease tankage when not shut in.

In the older prorating areas of the Texas division of the salt basin region there continues to be little change in conditions as compared with the recent past.

Prorating practice is in effect on the basis of 40 per cent withdrawals as compared with potential production in the Glasscock county area, southwest of Howard county development, around the Kirby Petroleum Co., Lion Oil & Refining Co., and Sun Oil Co. wells.

The area mentioned is broadly described as beyond the Howard-Glasscock development in the so-called Roberts-Settles field, where allowable production has been on a prorating maximum of 37,500 barrels daily.

Howard and Glasscock counties, together, were producing Nov. 1 at the rate of 38,415 barrels daily from a total of 416 wells. Winkler county, with 593 wells, was producing only 110,565 barrels daily, notwithstanding a maximum allowable under prorating practice of 150,000 barrels daily.

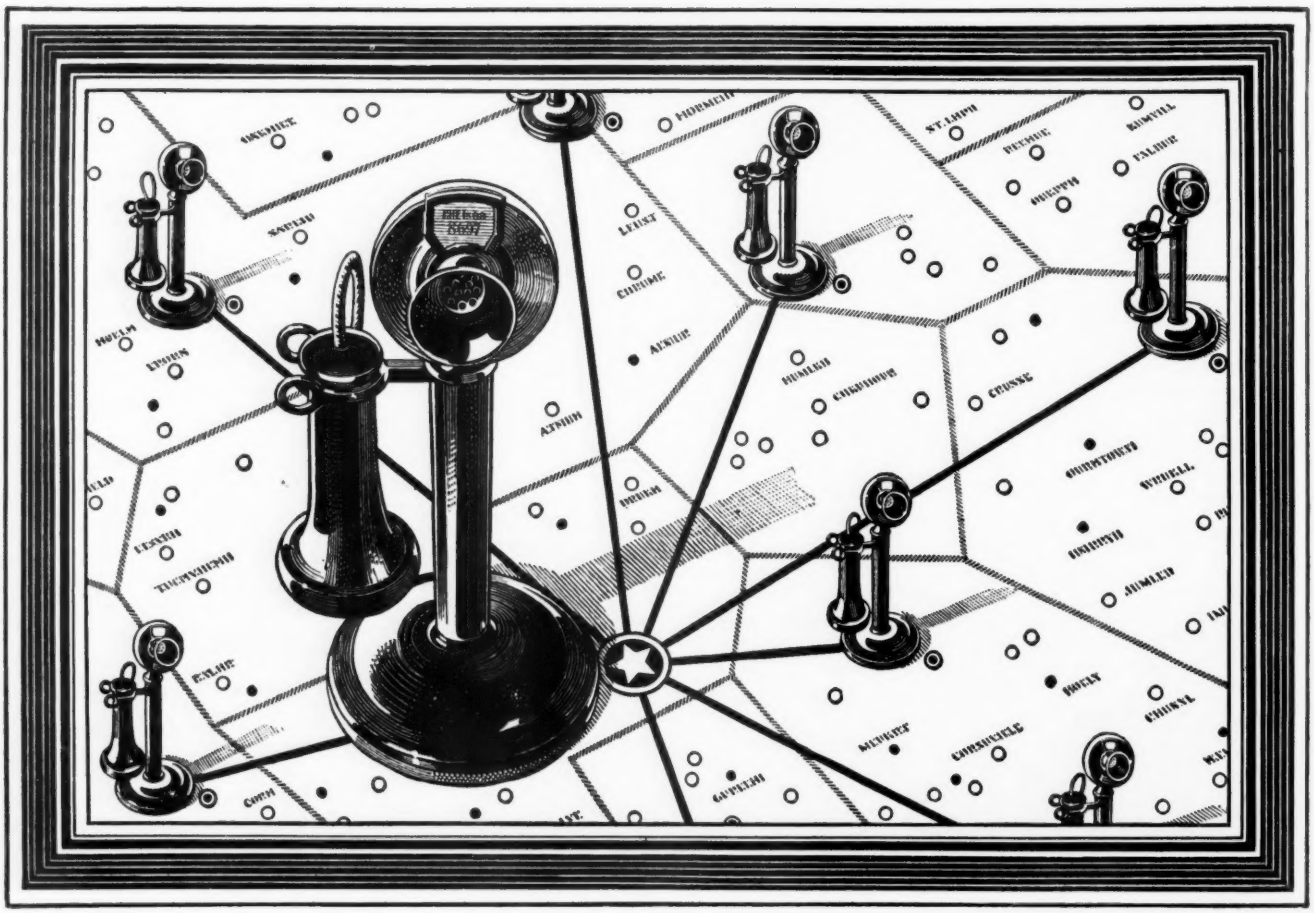
The inability of many 40-acre units to make their allowable under the prorating yardstick brought about the condition mentioned for Winkler county. Although undoubtedly some wells and leases could produce excess oil as compared with their present allowances the situation generally was such that the Winkler territory may be described as no longer holding possibilities of exploitable production over and above the actual.

In Yates field, which has been prorated from the beginning, potential production is still recognized to exceed 1,000,000 barrels daily under the yardstick used. Exploitation approximates the 130,000 barrels allowable maximum daily under which prorating practice is applied.

Daily production of 139,540 barrels from 356 Pecos wells, Nov. 1, included approximately a dozen completions in the Girvin district, 18 miles west of the Yates field, and scattered wells elsewhere in the county.

[1] National Petroleum News, page 32, Oct. 16, 1929, and page 33, Oct. 23, 1929, issues.

Cover your Sales areas by Telephone... the Key Town plan



THE modern way to keep in touch with customers is by telephone from centrally located towns. For information and arrangements about the Key Town plan, go right to your local Bell Telephone Business Office.

A soap salesman went to the telephone office in Forest City, Arkansas, and placed 30 calls to 10 surrounding towns.

Twenty-five sales resulted in $2000 worth of business in 3 hours. Cost of the calls, $12.90. The salesman estimated it would have taken him 2 weeks plus traveling expenses to visit the towns and dealers individually.

The Bell System has prepared national and regional Key Town maps suggesting convenient centers for reaching the entire country by telephone.

Sequence lists filed with the operator in advance enable calls to be put up quickly, one after another.

Classified telephone directories help in developing prospects and new outlets.

The credit plan used in connection with the Key Town plan obviates carrying cash for telephoning and keeps a detailed record of the calls.

Why not telephone your local Bell Telephone Business Office now for the Key Town maps and information? They are free. Bell Telephone Service is *Convenient . . . Economical . . . Universal.*

The Mid-Continent Skyline

By Lawrence E. Smith

BACK in August, 1927, James S. Moore, derrick man, fell 77 feet from a rig in the Earlsboro district. Driller R. I. Medcalf, on the derrick floor, did a bit of quick thinking. He not only stepped in and caught the falling man in his arms but deflected him so that instead of Moore's head striking a timber that was directly in line, he hit it feet first. One leg was shattered. Medcalf suffered only sprained wrists at the time; later he felt the effects of the terrific wrench given to the muscles of his back. He is, however, on duty as a driller in the Oklahoma City field.

For this bit of heroism, Medcalf was last week awarded a bronze medal by the Carnegie hero fund commission.

The same fund made posthumous award of a bronze medal and $80 per month death benefit to the widow of C. E. Sanders, refinery worker of Tulsa, who lost his life in October, 1928. He went to the rescue of a man, his wife and five daughters, when their boat overturned in a little lake in Oklahoma. One girl and the father were saved.

* * *

R. G. Rapp, general manager of the Denver Producing & Refining Co., Okmulgee, was elected a vice-president of the company at the recent annual meeting. F. G. Shreves was re-elected president and W. R. Schellhammer, of Warren, Pa., vice-president.

* * *

Economics Department: Oklahoma City folk weigh themselves on penny scales to the extent of $27,000 yearly.

* * *

M. J. Kirwan, manager of production and engineering for the Indian Territory Illuminating Oil Co., is back from a hurried trip to California, necessitated by the sudden illness of his father. Part of the trip was made by T. A. T. plane. Mr. Kirwan spent a little time in the field while there and observed that the Mid-Continent deep drilling operations are conducted in quite as modern and efficient a manner as are any of those in California.

In some respects he even gives the edge to the Mid-Continent, although he generously concedes that there are some California practices that might well be adopted here. He believes that a liberal exchange of information and more visiting by engineers in each others' territory would be helpful. "Matt" was a Californian before he was an Oklahoman, so he may be said to speak without prejudice.

* * *

Charles A. Prichard is the new purchasing agent for the Mid-Continent Petroleum Corp. His most recent post of duty was that of chief purchasing agent for the Continental Oil Co., in Denver. Prior service was in the sales department of the Frick-Reid Supply Co., and purchasing agent for the old Texhoma Oil & Refining Co., which was absorbed by the Continental.

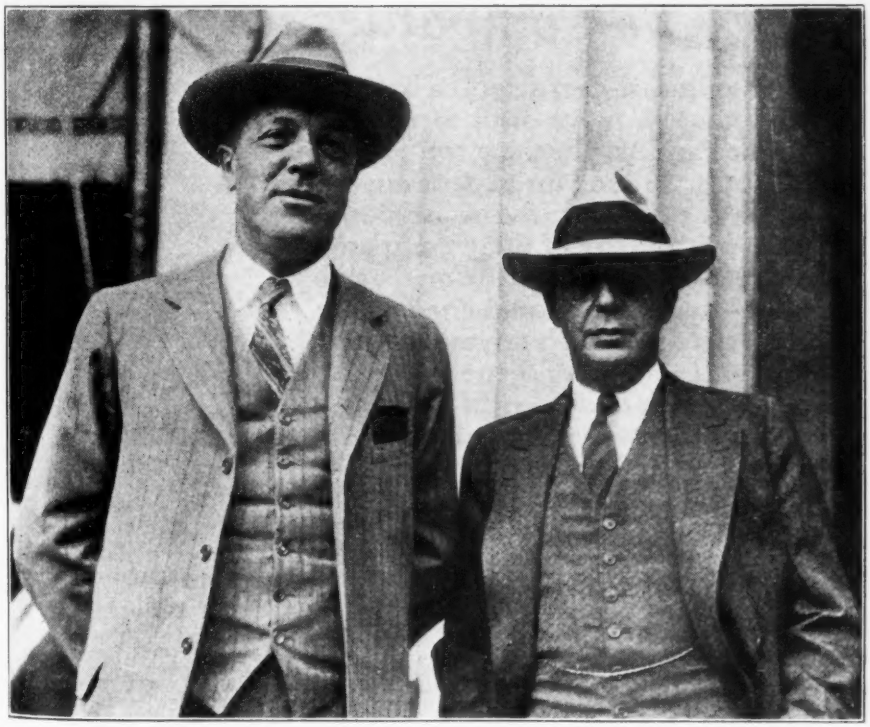
J. R. Stockton, who has been acting as chief purchasing agent for the Mid-Continent since the death of George C. Pohler, remains as first assistant to Mr. Prichard.

* * *

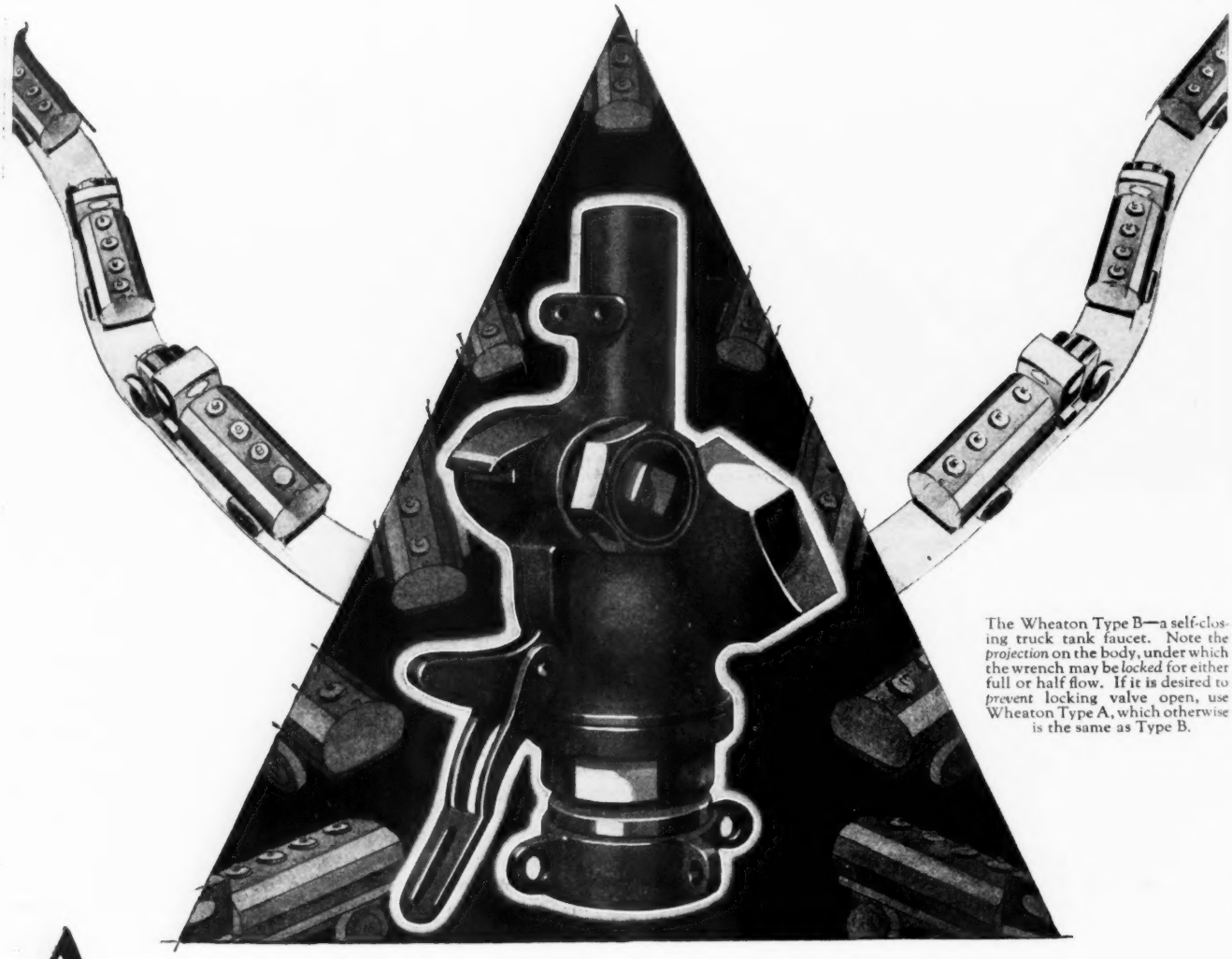
F. W. Shelton and E. F. Miller, petroleum engineer and geologist respectively, of the Reiter-Foster Oil Corp., were recently elected directors of their company. Mr. Shelton also holds the office of vice-president. Company management will be in the hands of a directorate committee consisting of Paul S. Ache, President of the Corporation, and the two new directors.

Mr. Shelton is thoroughly familiar with the practical application of his technical training. He spent several years doing the actual work in the fields of Wyoming and Texas for the Midwest Refining Co., of Denver. As petroleum engineer for the latter company, previous to joining Reiter-Foster in the same capacity two years ago, he was one of the first to successfully apply the gas lift in the Panhandle.

Mr. Miller was formerly with the old Marland Oil Co., for which he made detailed geologic studies of Texas, New Mexico and Oklahoma. The experience gained in this way will be invaluable in his new position.



What with handling production of the associated Indian Territory Illuminating Oil Co. in the Oklahoma City pool, Fred Haskell, left, has had a busy year. He manages the Empire Pipe Line Co. With him here is Warren Sinsheimer, Cities Service Co., New York, who has recently spent some time in the Mid-Continent



The Wheaton Type B—a self-closing truck tank faucet. Note the *projection* on the body, under which the wrench may be *locked* for either full or half flow. If it is desired to *prevent* locking valve open, use Wheaton Type A, which otherwise is the same as Type B.

America's Greatest Oil Companies are RIGHT!

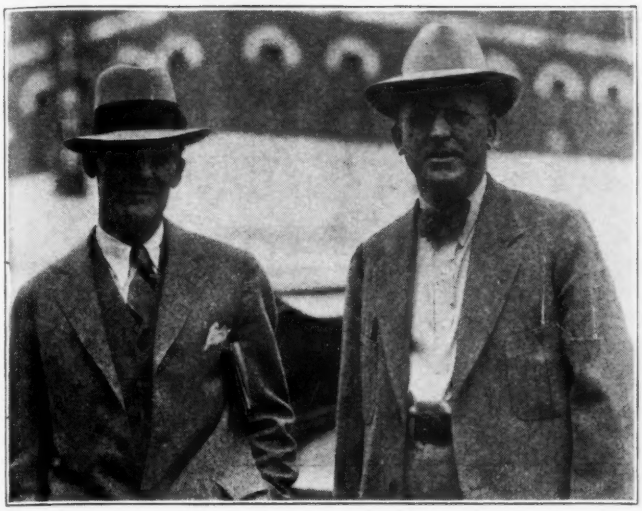
By their purchases during the last decade and a half, America's greatest oil companies have shown a distinct preference for Wheaton Truck Tank Faucets. In their *continued* selection of Wheaton—after so long an experience—they must be RIGHT! * * * One of the most popular Wheaton Faucets with many of these companies is the Type B, pictured above, made of special analysis bronze—tempered, toughened and tested, and perfectly fitted and finished. * * * Send for a sample of Type B today. Give it your own test. If you are not entirely satisfied, you may return it for credit or refund.

A. W. WHEATON BRASS WORKS
Newark, New Jersey

Empire Brass Mfg. Co., Ltd., London, Ontario, Canadian Manufacturers and Distributors

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS



Father and son are now both in the oil business. At left is Ralph E. Wertz, Jr., who is in the drilling contracting business at Pawhuska. With him is his father, vice-president of the Producers & Refiners Corp.

F. W. Shelton, vice-president and petroleum engineer, and E. F. Miller, geologist, of the Reiter-Foster Oil Corporation, who were recently elected directors of that organization

Jeff Boucher has been made general manager of the Gilliland Oil Co. of New Mexico and has moved to Albuquerque, where the company operates a refinery. Mr. Boucher formerly was Tulsa division manager of marketing for the Independent Oil & Gas Co. In the latter position he was succeeded by A. H. Robinson, formerly assistant manager of wholesale sales for the Independent.

* * *

H. E. Walmsely is now superintendent of core drilling for the Skelly Oil Co. in Kansas. He was a member of the production department at El Dorado, Kans., and is secretary of the A. P. I. field chapter at El Dorado.

* * *

Preliminary rumblings to the effect that E. B. Howard, former representative in Congress and Independent oil producer, of Tulsa, would run for governor of Oklahoma in 1930, were borne out last week when he made formal announcement. He is a democrat.

* * *

Better railroad service for the Texas Panhandle territory is proposed by the Santa Fe railway interests. They have applied to the Interstate Commerce Commission for permission to build from Amarillo through Potter, Moore, Sherman and Dallam counties, via Dumas to Stratford, 98 miles. Another 50 miles would be built from Dumas through Moore, Hutchinson and Hansford counties to Spearman.

* * *

M. J. Munn, petroleum geologist, is managing the north Arkansas venture of the J. S. Cosden interests, maintaining offices in Little Rock. Acreage blocks have been assembled in White, Cleburne, Faulkner, Van Buren and Pope counties and a well is being started in 19-9-10, near Heber Springs, Cleburne county.

Oklahoma's recent orgy of impeachments has finally been put into book form. The total is more than 13,000 pages in six volumes, weight 36 pounds. It required 5,500 pages, 17 pounds, to impeach and convict former Governor Johnston.

* * *

H. E. Ozenberger, eastern Kansas scout for the Empire Oil & Refining Co., has been transferred to Muskegon, Mich. He went from El Dorado to Wichita several months ago, when Sedgwick county developments claimed most of the attention. Empire has been taking an interest in Michigan and several months ago moved John Reeves, geologist, to Muskegon to have charge of the Campaign. Mr. Ozenberger will serve in the dual role of scout and land man.

* * *

Col. H. L. Wood, the veteran oil writer, perked up last week and appeared in the Daily Oklahoman on Sunday with a column of comment, which they advertise will be a regular feature. The colonel has been in bad health for several months and is still in St. John's Hospital, Tulsa.

* * *

Fred Capshaw, Oklahoma corporation commissioner, has announced his candidacy for the democratic nomination for lieutenant governor in 1930. Mr. Capshaw is widely and favorably known to oil men and in the office he now holds he has been a strong supporter of the many conservation efforts made by Oklahoma producers.

* * *

Funeral services for James B. Johnson, former purchasing agent for the Tidal Oil Co., were held in Tulsa. He died in McPherson, Kans. His term of service with the Tidal was 12 years and he had been with the Frick-Reid Supply Co. for about an equal period. Death followed a long illness.

New directors of the Petroleum Accountants Society of Oklahoma, elected last week, are C. E. Murray, Empire Companies, Bartlesville; Charles F. Smith, Chestnut & Smith Corp., Tulsa and M. H. Massey, Independent Oil & Gas Co., Tulsa. The society, one year old, now has 154 members representing 43 oil companies.

* * *

Died: In automobile accident, Wayne Atherson, chemist for Empire Refineries, at Ponca City. The accident, a collision, occurred at a Ponca City street intersection.

* * *

In connection with its campaign to buy, under the option in the original franchise, the properties of the Oklahoma Natural Gas Co. in Oklahoma City, the city council caused a survey to be made of the potential supply in the Oklahoma City field. Geologists William H. Atkinson and Hubert S. Bale, retained for this work, reported last week that the total available amount is 15,696,144,000,000 —that is trillions and not billions— cubic feet. That sounds like quite a lot of gas. At present rate of consumption, the geologists figured such a supply would last Oklahoma City 1075 years.

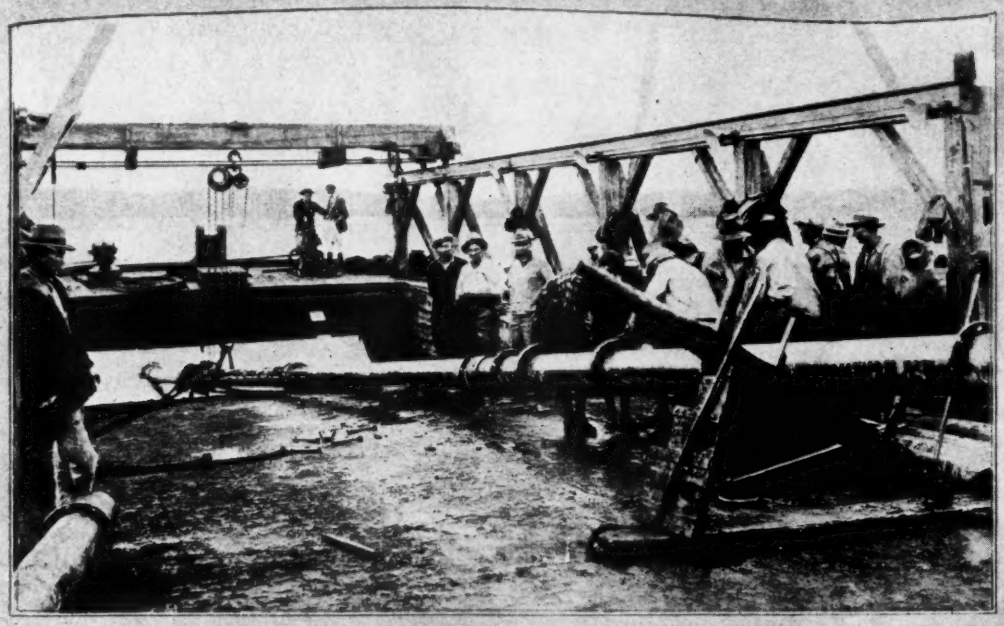
Just after the report was made, Reid S. McBeth, of the Oklahoma Natural, sportingly offered to bet the city council one million dollars that the supply would not last a thousand years.

Ten Years Ago

(From National Petroleum News, Nov. 5, 1919)

Homer field, Louisiana, has potential production of 150,000 barrels daily.

Seven new pools opened in Oklahoma in one week.



Laying water lines at Mississippi river crossing

208 Miles of 18-Inch Gas Line in 92 Days Is Record on Memphis Project

STARTING in Louisiana, this 208-mile 18-inch gas line reached Memphis in 92 days. Laying the line involved the crossing of cotton fields, gumbo, swamps, the Mississippi and four other rivers; nine railroads; canals, ditches and bayous—about the full range of experiences that would likely be encountered in laying a pipe line anywhere.

While much credit belongs to the skill of workmen and the wise supervision of the job, still a share may go to an ever-ready and adaptable pipe whose characteristics—more particularly strength, ductility and well-finished ends, meant much in the general success of laying the line.

There is much satisfaction in knowing that when difficult installation problems are encountered which place extra strain on the pipe, such as, crossing rivers and deep ravines, that the pipe can be counted upon to meet these special conditions in a thoroughly satisfactory manner. The extensive use of NATIONAL for lines involving unusual engineering problems is substantial evidence of the reliability of this pipe for special and difficult conditions—one of the reasons why NATIONAL is

AMERICA'S STANDARD PIPE FOR OIL AND GAS LINES

NATIONAL TUBE COMPANY · Pittsburgh, Pa.

Subsidiary of United States Steel Corporation

NATIONAL PIPE

Oklahoma City Adds Two More Wells; Showing in Kansas Wildcat

By John Power
N. P. N. STAFF WRITER

TULSA, Nov. 2

FURTHER proof was offered this week that the east central edge of the Oklahoma City pool has been pretty well established. A good showing of oil in a wildcat drilling in Ness county, extreme western Kansas caused comment, and may be expected to revive interest in a part of that state where interest has lagged a bit of late.

There were no new areas opened by spectacular wildcat completions. Nor, on the other hand, was there any area condemned by dry holes from which great things had been expected. It was, in other words, a dull week.

Outside of the workings of proration, which are discussed elsewhere in this issue of NATIONAL PETROLEUM NEWS, most of the attention in the Oklahoma City field is centered on the east side of the pool. A completion, the Prairie-Slick No. 3 Hiddleston, SW SW SE of 19-11N-2W, is good for some 300 barrels per hour. It is directly in the north and south line of the producing wells along the east edge of the field, and is not regarded as a surprise.

And then there is the same operators' No. 2 well on the same lease, the well being located in the SE of 19-11-2W. This apparently is going to be a failure, as it has reached a total depth of 6700 feet without doing anything more reassuring than filling up 3000 feet with oil.

The test is but three locations due east of the nearest producing well, but it is running more than 400 feet low on the marker formations, and is better than 200 feet past the depth from which production is expected in the lime. It is considered probable by those who have studied the field that the other edges or limits will be sharply defined when they are found.

One of the better completions in the field so far was the Coline Oil Co. No. 3 Olds, in the NE of 24-11N-3W. Having established itself by making some 12,000 barrels initial production it has been shut in until Nov. 30 in compliance with the operating agreement now in force. Production is coming from the detrital zone, as it is in the other wells on the lease, the No. 3 having topped that formation at 6409-6437 feet.

As of Nov. 2 the Oklahoma City pool enters the alternate well plan of proration. Alternate wells, designated as the "A" and "B" wells will be produced. The "B" wells will be shut in four days and the "A" wells allowed to produce. At the end of the four day period the "B" wells will be opened and the "A" wells shut in. This plan will be followed, with slight variations in the number of days the wells are to be open, until Dec. 2.

This procedure is expected to reduce production from the field some 40 per cent. Since Oct. 12 there has been no limit imposed on producing wells other than that caused by tankage or pipe line facilities. Of course, the 30 day shut down, which ended Oct. 12 still holds good on wells which are being drilled in, as the 30 day shut down was made equally applicable to drilling and producing wells.

Drilling wells were either shut down at the same time as the producers, or for 30 days beginning 24 hours after the well was drilled in. There are six such completed wells shut in at the present time.

The following table, which shows the field's production by leases for the 24 hour periods ending at seven a.m. Oct. 26 and Nov. 2, also shows the increasing amount of water which some of the wells in the pool are making. The figure for Nov. 2 is for the last 24 hour period before the "A" and "B" went into effect.

Company	Well	Prod. Nov. 2	Remarks	Prod. Oct. 26	Remarks
Coline	1-Olds	4247 bbls		4511 bbls.	
Coline	3-Olds	.....	shut in	.....	
Cromwell-Franklin	1-Trosper	3127 "		3942 "	
Hall-Briscoe	1-Childs	7378 "		7411 "	
I.T.I.O.-Foster	1-B. Anderson	.....	shut in	.....	shut in
I.T.I.O.-Foster	2-A. Bodine	1125 "		1722	show wtr.
I.T.I.O.-Foster	1-S. Bodine	2012 "	6157 wtr.	1953 "	3190 "
I.T.I.O.-Foster	2-S. Bodine	69 "		108 "	drilling
I.T.I.O.-Foster	1-Button	3265 "		4191 "	
I.T.I.O.-Foster	2-Button	.....	shut in	.....	shut in
I.T.I.O.-Foster	1-Fuzzell	14,384 "		14,591 "	
I.T.I.O.-Foster	1-Johnson	.....	shut in	2034 "	
I.T.I.O.-Foster	1-Henning	.....	drilling	490 "	1614 wtr.
I.T.I.O.-Foster	1-Fee (discovery)	1377 "	4331 wtr.	1673 "	4258 wtr.
I.T.I.O.-Foster	1-Trosper	1002 "	775 wtr.	1215 "	710 wtr.
I.T.I.O.-Foster	1-Watters	.....	shut in	.....	shut in
Mid-Kansas	1-Fortson	2328 "		2226 "	
Mid-Kansas	2-Fortson	1911 "		2206 "	
Mid-Kansas	3-Fortson	.....	shut in	.....	shut in
Prairie-Slick	1-Hiddleston	4470 "		4280 "	
Prairie-Slick	3-Hiddleston	5605 "	20 hrs.	.....	
Shell	1-Petty	8605 "		8504 "	
Sinclair	1-Stamper	2380 "		2960 "	
Franklin.	2-Lowry	5500 "		5293 "	

The East Little River pool, or the 7-7 area, as it is sometimes referred to, continues to spread out slowly, but nevertheless surely. The principal lease in the area, the famous Smith property of the Mid-Continent Petroleum Corp. in 5-7-7, added its eleventh producer during the week.

The well is in the SW NW SE of the section. It reached the Wilcox at 4195-4217. At this depth it made about 40 barrels per hour. This amount was later increased to about 65 barrels hourly when the well was deepened to a new total depth of 4223, still in the Wilcox.

The southeast extension to the Earlsboro pool has not been faring so well in its more recent completions. This is particularly true of wells being drilled in along the north edge of the pool.

Magnolia Petroleum Co. has drilled in and shot two wells in the northeast quarter of 18-9-6 without getting anything like as good wells as the field has been producing up to date. Gypsy Oil Co. drilled a dry one in the SE of 31-10-16, getting 800 feet of water from the Wilcox at 4310-39.

Operators with acreage in western Kansas have been pricking up their ears at reports of a good showing of oil in Continental Oil Co.'s No. 1 Aldrich, NE SE of 7-18S-25W, Ness county. The test has 3000 feet of oil in the hole from a pay believed

to be the Simpson dolomite. It was topped at 4428-30, which is said to be quite a bit higher than the nearest failure in the same horizon. A string of 5-inch casing is being run, and the possibilities of the sand will be given a chance to prove themselves.

There are many large blocks of acreage held in this part of Kansas, and it is looked upon as a certainty that this oil showing will be sufficient proof of the structures of this area to start a lively coring campaign in the near future. The test is located on a core drilled structure, and the presence of what oil there is in the hole at the present time is looked upon as more or less proof of the efficacy of structure in this part of the state.

No further word has been heard from the Dixie Oil Co.'s test in Saline county, in the NW NE of 10-16S-3E. Two hundred feet of oil from the Viola lime has been reported, but it is said casing trouble has prevented the showing from being given a thorough test as yet. The Viola was reached at 3308, and was drilled but one foot.

Another completion in Kansas during the past week may be considered a "discovery." The Shell Petroleum Corp. found chat production about one-half mile north of the Lygrisse discovery well in eastern Sedgwick county. The latter is producing from the Simpson dolomite.

The new well topped the chat at 2857, drilled to 2857 and is swabbing better than 1200 barrels daily. Chat production in this area does not cause the operators to get as interested as it formerly did, but this well is already being offset. It is in the SW of 11-26-2E.

The Lefors area, Gray county, Texas Panhandle added another good well when the Shamrock Oil Co. No. 2 Lincoln Saunders came in for 2713 barrels initial production. The oil is coming from the granite wash pay, topped at 2492-93. The well is in section 3, Blk. 1, A.C.H.&B. survey.

The Finley pool in the same county got two more producers although neither of them were as good wells as the one in the Lefors area. White Eagle Oil & Refining Co. No. 2 Faulkner is making some 930 barrels daily from the pay at 2797-2842. The Texas Co. No. 7 Faulkner is making 1338 barrels from the same formation encountered at 2815-25. Both wells are in section 29, Blk. B-2, H.&G.N. survey.

One of the most interesting wells in Hutchinson county is the Continental Oil Co.'s No. 1 C-Johnson, in section 5, Blk. 1, B.&D. survey. Eight months old, the well has averaged 1100 barrels since it was drilled in. Deepened six and one-half feet to a new total depth of 3058 in the granite wash it increased its production from 1050 barrels daily to 85 barrels per hour.

Well Potentials in Marshall Pool Computed from Master Curve

TULSA, Oct. 31

ANXIOUS not to disturb the back pressures which have been maintained on the producing wells of the Marshall pool of Logan county since its discovery, the operators in the field have agreed to cut their production 20 per cent below the wells' actual production under the existing back pressures. It is felt that to open the wells once every seven days for an open flow test would dissipate the gas and the gas pressure so carefully conserved during the past two and one-half years.

Based on the combined figures and estimates of the engineering staffs of all companies operating in the field, this back pressure, which has been maintained on all wells, is considered to have caused about an 8 per cent reduction in the daily production of the field to date, although undoubtedly increasing the total recovery which the field may be expected to yield. By prorating under the present undisturbed production figures, it is estimated that the field is actually cutting its potential production some 28 per cent.

In order to arrive at the proper figure on which to base the daily allowed production, without taking the actual open flow gage of the wells every week, and in order to allow for the natural decline reducing potentials, a combined, or family curve of the entire pool's production to date was made up by the engineering staffs of all the operators in the pool. This curve was projected to show what the production might be expected to be in the future, and it is from this curve that the various well's individual potentials will be computed.

In order to care for new wells which may be completed while the present proration plan is in effect, a set of figures showing the average natural decline was drawn up. When new wells are completed their initial production locates them in the series of figures. From then on, the new well's potential is considered to be the same as the average throughout the field, and it is choked to 20 per cent under what the figures show for the potential of a well of that size initial production during the particular week in question.

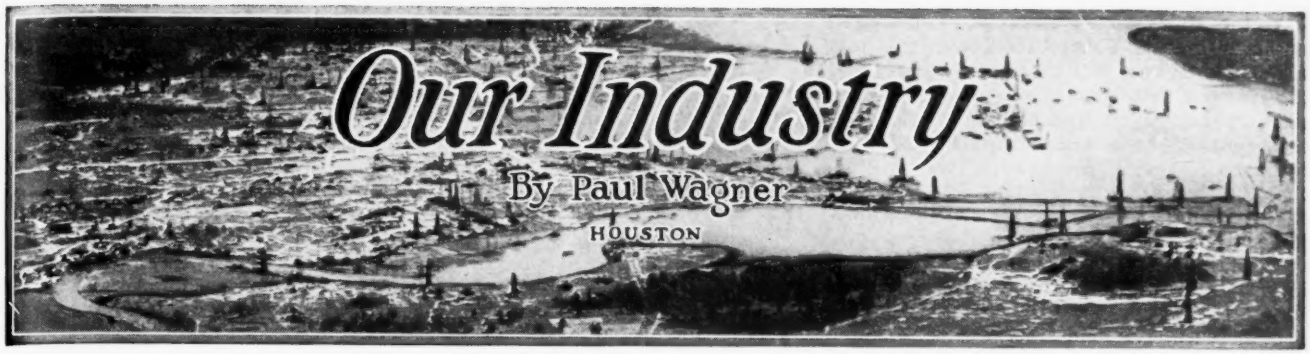
For example, a well with an initial production of 5000 barrels per day is considered to have a potential of 4600 barrels the second week, 3380 barrels the sixth week, 2110 barrels the eighteenth week and so on. The accompanying figures are those which will be used to determine the week to week potentials of such wells as are brought in while the proration plan is in effect.

Production figures from South Marshall Master Curve

		Prod. Bbls.			Prod. Bbls.
1	Week	5000	66	Week	555
2	Week	4600	67	Week	535
3	Week	4150	68	Week	515
4	Week	3700	69	Week	500
5	Week	3540	70	Week	485
6	Week	3380	71	Week	475
7	Week	3240	72	Week	460
8	Week	3100	73	Week	450
9	Week	2980	74	Week	435
10	Week	2860	75	Week	425
11	Week	2740	76	Week	410
12	Week	2640	77	Week	400
13	Week	2540	78	Week	390
14	Week	2440	79	Week	380
15	Week	2350	80	Week	370
16	Week	2260	81	Week	360
17	Week	2185	82	Week	350
18	Week	2110	83	Week	335
19	Week	2050	84	Week	325
20	Week	1990	85	Week	310
21	Week	1925	86	Week	300
22	Week	1865	87	Week	290
23	Week	1810	88	Week	280
24	Week	1760	89	Week	275
25	Week	1715	90	Week	270
26	Week	1670	91	Week	260
27	Week	1625	92	Week	250
28	Week	1585	93	Week	245
29	Week	1545	94	Week	240
30	Week	1510	95	Week	235
31	Week	1470	96	Week	225
32	Week	1430	97	Week	220
33	Week	1395	98	Week	210
34	Week	1360	99	Week	205
35	Week	1330	100	Week	200
36	Week	1300	101	Week	195
37	Week	1275	102	Week	185
38	Week	1250	103	Week	180
39	Week	1220	104	Week	175
40	Week	1190	105	Week	170
41	Week	1160	106	Week	160
42	Week	1130	107	Week	155
43	Week	1100	108	Week	150
44	Week	1075	109	Week	145
45	Week	1045	110	Week	140
46	Week	1020	111	Week	135
47	Week	960	112	Week	130
48	Week	935	113	Week	125
49	Week	910	114	Week	120
50	Week	885	115	Week	115
51	Week	860	116	Week	110
52	Week	835	117	Week	105
53	Week	810	118	Week	100
54	Week	785	119	Week	95
55	Week	760	120	Week	90
56	Week	740	121	Week	85
57	Week	810	122	Week	80
58	Week	695	123	Week	75
59	Week	675	124	Week	70
60	Week	655	125	Week	65
61	Week	640	126	Week	60
62	Week	620	127	Week	55
63	Week	600	128	Week	50
64	Week	585	129	Week	45
65	Week	570	130	Week	40

New Territory Opened Near Electra

HOUSTON, Oct. 31.—The semi-wildcat test of Sheldon-Everetts and others, on the Volkart farm, nine miles northeast of Electra, turned attention to the Greater Wichita Falls district development area at the end of the week. It was estimated making 750 barrels daily in 17 feet of sand topped at 1913 feet. The well is a half mile extension from three smaller completions which previously opened pumping production in a new spot near Electra. The old Sunshine Hill development is three and a half miles southwest of the new area.



WILDCATTING operations of the Mexican government in northern Nuevo Leon are being conducted under the supervision of Ricardo T. Jordan, head of the "Control de Administracion," who will handle them direct from Mexico City headquarters. Material for two new "Control" wildcats has been shipped to locations, one about halfway between Rodriguez and Monterrey, known as Camarones No. 1, and another to Kilometer 127.8, north from Monterrey, near Aldamas. The Camarones test is to be drilled with rotary equipment and the Aldamas test with cable tools.

* * *

John W. Watts, Jr., is now with the oil well supply department of the Peden Co., Houston, assisting E. C. Reich in handling southwest Texas territory through San Antonio district headquarters.

* * *

Carl H. Beal, widely known as a consulting geologist and for years a vice president of the old Marland Oil Co. of California, is now representing the Independent Oil & Gas Co., on the Pacific Coast, with headquarters at Los Angeles. Mr. Beal returned actively to the oil business this fall, after spending the summer in Europe.

* * *

Friends of Robert N. Mullin, marketer extraordinary of petroleum products, will be glad to learn that he is located on the south side of the Canadian boundary in charge of the Chicago marketing district of the Continental Oil Co. Many will remember him when he was on the north side of the Mexican boundary at El Paso, first operating his own distributing business and later with the old Continental Oil Co. of Maine, before its merger with the Marland companies into the newer Continental Oil Co. of Delaware.

History records that "Bob" was the only "gringo" to successfully get away with the slapping of Pancho Villa's face. Grapevine information from the north, which must remain unvouched for, is that one reason "Scarface Al" stays in jail so peacefully at Philadelphia may reflect "Bob's" reputation and presence in the Windy metropolis.

* * *

Paul King is back in the engineering department of the Lone Star Gas Co., Dallas. For about a year and a half he was connected with surveying work of the Dixie Gulf Gas Co., with Houston headquarters.

* * *

It was only a friendship of years standing that permitted the conductor of this column getting a snapshot of J. R. ("Slim") Crawford, Shreveport drilling contractor. The accompanying picture is said to be the first that has been taken of him in the last decade. Whether the statement is true or not, the likeness is a fairly good one. Mr. Crawford operates producing properties in North Louisiana and South Arkansas in addition to carrying on a contracting business there and in Oklahoma. He has been widely known in the southwestern industry since original Spindletop development.

* * *

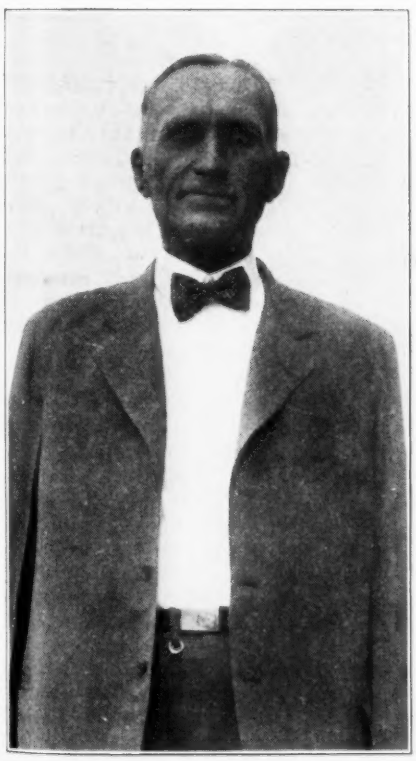
Willis H. Thompson, now in charge of the Gulf Coastal territory of the Oil Well Supply Co., was recently transferred to Houston from the headquarters office at Pittsburgh. He was formerly assistant to the general sales manager at Pittsburgh. Previously, he was district sales manager at Fort Worth.

* * *

Sam Gladney, field superintendent of the Sun Oil Co., in the El Dorado, Ark., takes an active part in the work of the American Petroleum Institute Division of Development and Production Engineering, as evidenced by his various connections. In addition to being the state vice president for Arkansas of the Texas-Louisiana-Arkkansas district, he is chairman of an El Dorado chapter composed of field men. Other officers of the El Dorado chapter are E. W. Bissett of the Skelly Oil Co., vice chairman; and George W. Moore of the Root Refining Co., Inc., secretary-treasurer.

* * *

Peter B. Baggs, geologist in the Pure Oil Co. organization, has returned from South America and has been transferred to the San Angelo district.



J. R. "Slim" Crawford

Willis H. Thompson

Victor H. Wilhelm, chief petroleum engineer of The Texas Co. of California, Los Angeles, is a Stanford graduate in geology and mining. After many years in oil and mining work, together with experience on the United States Geological Survey, he served the California State Mining Bureau as deputy oil and gas supervisor. He joined the California Petroleum Corp., at Fellows, in the San Joaquin Valley, in the winter of 1926, reaching his present position after its merger with The Texas Co. of California.

* * *

Frank Barron of the Gulf Production Co. has succeeded Paul Buchanan of the Shell Petroleum Corp. as president of the local organization of oil industry scouts in the Wichita Falls district. About 20 scouts working in the territory maintain their own organization.

* * *

J. S. McCathern, general superintendent of the Orinoco Oil Co., subsidiary in Venezuela of Pure Oil Co., has returned to Maracaibo headquarters after a trip to Chicago and elsewhere in The States. Mr. and Mrs. H. C. O. Clarke of Chicago have also gone to Venezuela.

* * *

K. C. Baker, who heads the United North & South Development Co., with headquarters at San Antonio, has returned home after a business trip to New York City.

* * *

H. W. Richardson of the Louisiana production district of Pure Oil Co., has been transferred to the Lawson territory, near El Dorado, Ark.

* * *

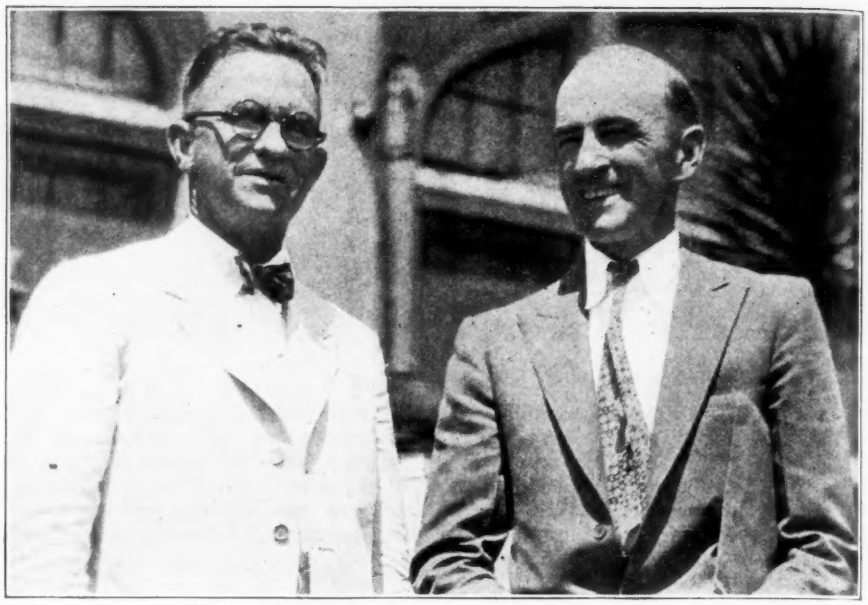
T. S. McKay, veteran driller and tool pusher at Huntington Beach for The Texas Co., of California, has devoted 55 of his 69 years to the petroleum industry. He went to work as a derrick boy at Sharpsburg, Pa., at the age of 14 years. His first 35 years in the industry were spent in the Pennsylvania fields, at Bradford, Titusville and Peckville. Later, he worked in West Virginia and Illinois, going to California 18 years ago. He reached the Texas Co. of California through the California Petroleum Corp., which it absorbed.

* * *

Miss Frances Charlton, formerly paleontologist in the El Dorado, Ark. offices of the Pure Oil Co., has been transferred to Venezuela, where she will engage in similar work for the subsidiary Orinoco Oil Co. Miss Charlton visited at Chicago headquarters of the Pure before taking her vacation in Brooklyn and then proceeding to South America.

* * *

Ward W. Ward and Owen Reese of the general office accounting department, Magnolia Petroleum Co., Dallas, have gone to Venezuela, where they will be attached to the materials division of the Lago Petroleum Co., subsidiary of the Pan American Petroleum & Transport Co. They resigned from the Magnolia organization in September.



James Hutcheson and Charles A. McCollum

* * *

Ray Adams has been transferred from the Dallas accounting department of the Magnolia Petroleum Co., under H. S. Edge, chief clerk, to Mirando City, Texas, where he will be assistant to Supt. A. H. Proctor.

* * *

G. E. Plumly of the refining department, Magnolia Petroleum Co., is lieutenant governor of Texas district Kiwanis clubs. He was unanimously elected at a recent meeting held in Tulsa of southwestern districts.

* * *

Phil S. Magruder, formerly in charge of field operations for the gas department, General Petroleum Corp., Los Angeles, has been appointed general superintendent, succeeding Ray C. Wheeler, who was advanced to manager. Mr. Wheeler succeeded George L. Ratcliff, now president of the California Talc Co.

* * *

John M. Vetter of the consulting geological firm of Bowman & Vetter, Houston, left the first of October on a business trip to Denver. He expected to return by way of Tulsa, visiting the Exposition before reaching home about the middle of the month.

* * *

J. M. Sitler, chief purchasing agent of the Humble Oil & Refining Co., is a new member of the Purchasing Agents Association of Houston.

* * *

President W. S. Farish of Humble Oil & Refining Co., Houston, and John R. Suman, director and general production executive, were among others representing their company at the Exposition in Tulsa.

* * *

An accompanying picture of James Hutcheson and Charles A. McCollum shows, respectively, the vice president and general manager of the Rio Bravo Oil Co., Southern Pacific subsidiary, and a Houston division field engineer in the organization of the National Supply Co. Mr. Hutcheson succeeded to his present position when John R. Suman resigned from the Rio Bravo several years ago, to become director and general production executive of the Humble Oil & Refining Co. Mr. McCollum, who is widely known in supply circles, has been identified with the National for years.

* * *

Jay E. Redburn, formerly connected with the Midwest Exploration Co., now represents the Saltmount Oil Co., with headquarters at Abilene, Texas. The Saltmount company is owned jointly by the Salt Creek Producers Association, Inc., and the Mountain Producers Corp., in both of which the Midwest Refining Co. holds interests. Mr. Redburn makes no change in headquarters, as he was previously at Abilene for the Midwest.

* * *

It would take almost the entire time of one man these days to keep track of the movements of Ernest J. Nicklos, production vice president of Continental Oil Co., Ponca City. After returning to headquarters from California, late in September, he visited Houston just ahead of the Tulsa exposition. The Houston trip was made by airplane.

* * *

Announcement is made of the resignation of Lester Landman, research chemist of the Texas Pacific Coal & Oil Co., at the Fort Worth refinery. His plans were not made known.

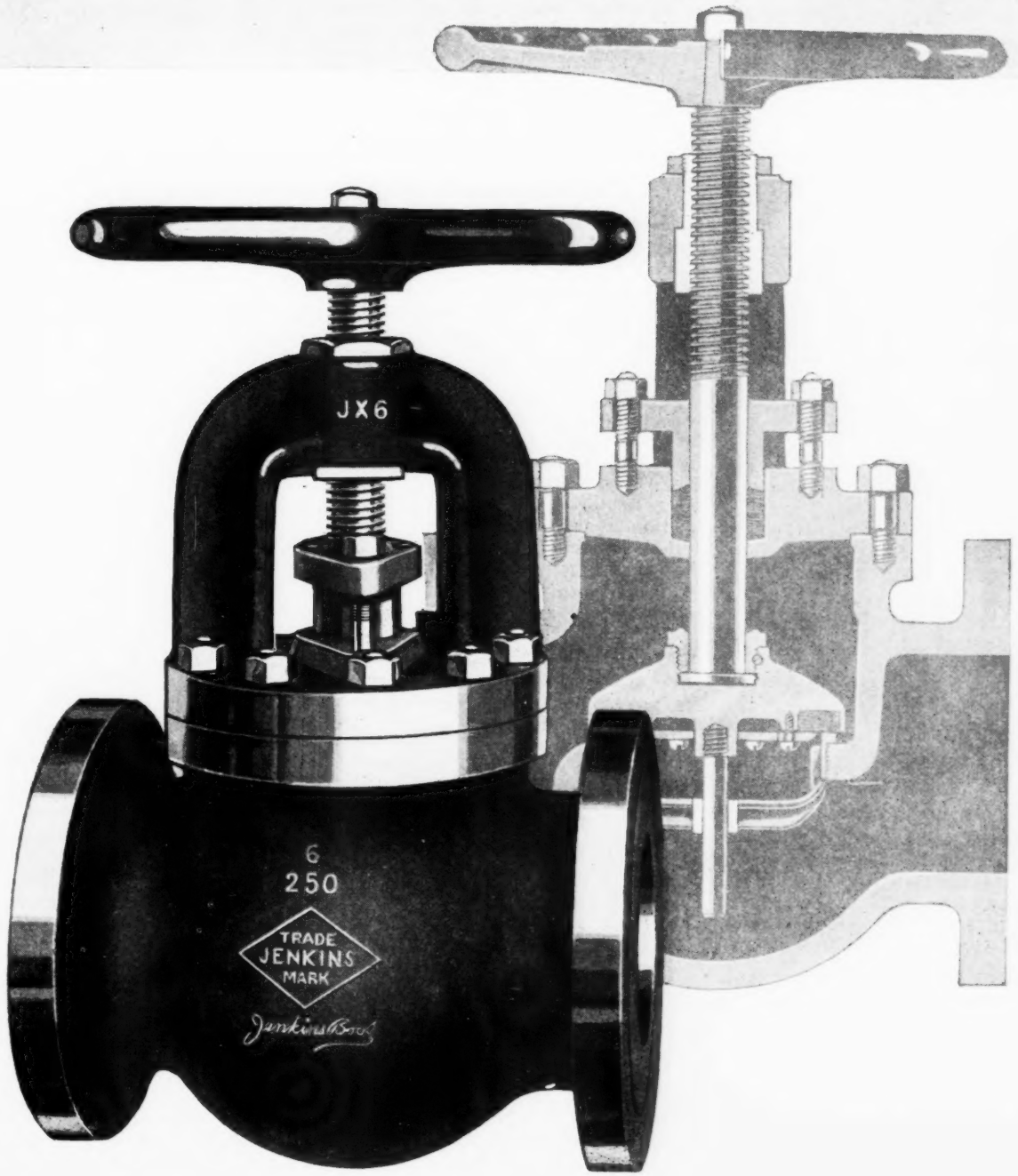
Jenkins VALVES ARE ALWAYS MARKED WITH THE "DIAMOND"

TRADE JENKINS MARK

Jenkins Bros

Bulwarked against the blows of hard service

FINEST valve metals, correctly distributed, bulwark Jenkins *Iron Body* Valves against the blows of hard service. Neither maximum pressure nor frequent operation lessens the enduring stamina of these sturdy valves. This Fig. 162, Jenkins Extra Heavy *Iron Body* Globe Valve is designed for 250 pounds steam or 400 pounds water. Made screwed and flanged. Jenkins Bros., New York, Boston, Philadelphia, Chicago ... Jenkins Bros., Ltd., Montreal, London.



Only Small Cut Made in Output Of Santa Fe Springs Field

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES, Nov. 1

AS OPERATORS in the flush California fields prepare to shut in their wells so that the "bugbear" of overproduction may disappear, production figures for the past week indicated that so far only a small percentage of the expected cut had been effected.

It was estimated that daily average production in the Santa Fe Springs field was 268,940 barrels as compared with 286,000 barrels for the previous week. The larger part of the reduction was due to natural decline in deep zone producers although a few small pumpers had been shut down.

Production by zones in the Santa Fe Springs field was estimated to be as follows:

Zone	Production	No. Wells	Av. per well
Nordstrom	14,557	21	693
Buckbee	19,174	37	515
O'Connell	106,740	98	1089
Clarke	99,470	60	1656
Upper zones	29,539	238	124

The shallow zone output shows an increase of several thousand barrels over the estimate of last week. This is partially due to repressuring measure adopted by several major companies in preparation for expected enforcement of the gas conservation law.

There are 276 projects heading for producing sands below the Meyer, including 18 wells which have drilled to various depths and are now standing idle. Approximately 230 of these wells are drilling, 153 still above the 7000 foot horizon and 76 heading for the O'Connell and Clarke zone, below 7000 feet.

Of the five completions at Santa Fe Springs during the week, George F. Getty Inc. obtained the only large producer. It completed its S. F. No. 26 for 7050 barrels of 33.7 gravity oil and 15 million cubic feet of gas from a depth of 7985 feet.

Five completions at Long Beach added nearly 6000 barrels of flush oil to the field's daily average bringing production to 167,530 barrels per day from 954 wells, as compared with 167,520 barrels from 957 wells for the previous week. Eight wells were either killed or shut down because of the low price offered for crude oil in the Signal Hill area of the Long Beach field.

Shell Oil Co. led at Long Beach, with 22,405 barrels from 91 wells with Richfield Oil Co. and Dabney Johnson Oil Co. running a close race for second, with 11,530 barrels from 49 wells and 11,045 barrels from 27 wells respectively.

It is estimated that there are 89 drilling wells, 75 idle wells, 21 rigs and locations, 30 wells that have been abandoned and 8 wells that are preparing to complete.

Interest continues to be strong at Potrero, the light gravity field on the outskirts of Inglewood. Max Pray, an Independent operator has deepened his well from 3831 to 3841 feet and is reported to have cored an oil sand in the last ten feet. He is now running tubing and will make a production test within a few days by putting it on the pump.

George F. Getty is erecting a derrick on his tideland permit No. 16-1 at Summerland, and has set 8⅝-inch casing at 1082 feet in its Sandomo No. 18-1. It is reported that cores indicate an inconsistency in the oil sands penetrated by this latter well that may result in a discovery of a fault line paralleling the coast.

Rio Grande Oil Co. will spud-in a well within the city limits of Ventura as a result of a new zoning ruling recently made by the city council. The oil ordinance prohibited drilling in residential areas but allowed it in industrial or specified areas. The land leased by Rio Grande was formerly included in the zone reserved for residences but has now been designated as an industrial tract.

It is expected that as a result of the change in zoning a number of other wells will be started, with the consequent enlargement of the producing area.

Barnsdall-Rio Grande joint interests have succeeded in reducing the output of their wells in the Elwood field to 24,000 barrels or a cut of nearly 30 per cent of the potential production of 33,000 barrels. If it is found to be necessary the combine will shut its wells in 40 per cent.

Standard Oil Co.'s Gerber 1, a wildcat, at point Conception, Santa Barbara county is drilling ahead below 2634 feet. Litigation had held operations in this project up for several months but clear sailing appears to be ahead and developments in this well will be watched with much interest.

In the Kettleman Hills field Standard Oil Co. has removed nearly half of the tubing in its well 11P-81 and expects to be deepening the project within a week. The other Standard well to be completed under the shut in agreement is well No. 8 in section 1, which is drilling ahead below 6729 feet in oil sand.

Petroleum Securities Co. owns the deepest well on the three domes in its Robinson 1, on section 14, 22-17, which is bottomed below 8100 feet and according to latest reports has not penetrated anything that even looked like oil sand. This well is located approximately two miles west of Milham's discovery well and, therefore, is known to be down structure. Petroleum Securities is drilling in oil sand in its No. 1 well on section 35 and its Ladd 1 on section 28.

Operations in other California fields continued at a more or less even trend during the past week as operators watched developments in the flush fields.

Oil Field Course Added To California "U"

LOS ANGELES, Oct. 31.—The opportunity for rapid advancement for field men with technical training, has been impressed upon the minds of oil field workers, with the result that schools offering such sources are being well attended.

The College of Engineering of the University of Southern California has included several new subjects in its curriculum. These include oil field development, oil land and leasing valuation, and engineering economics.

Next semester it is planned to add courses on the storage and transportation of oil, and on refining and utilization of petroleum products.

John Franklin Dodge, formerly petroleum engineer of the Standard Oil Co. of California, is professor of petroleum engineering at the university. Mr. Dodge was recently named national secretary of the drilling practice committee, American Petroleum Institute, and is consulting engineer to the California state supervisor of oils and gas, and to the attorney for the state director of national resources.

Natural Gasoline Men to Banquet

LOS ANGELES, Oct. 31.—The usual fall meeting of the California Natural Gasoline Association will not be held this year. It is felt by all concerned that the two-day session can be more valuable if held every other year, instead of every year, inasmuch as monthly meetings offer presentation of papers on various phases of the natural gasoline industry in California.

To offset the disappointment caused by the postponement of the meeting, it has been decided to hold a banquet Nov. 14 at the Biltmore Hotel, Los Angeles. In addition to several acts of vaudeville there will be a number of surprise packages, the entertainment committee says.

On the Western Front

By Jack N. Westsmith

WHENEVER a knotty legal problem confronts California oil companies E. D. Reiter, legal counsel for Miley Oil Co. is consulted.

At the present time Ed is busily engaged in settling the difficulties between major and minor oil companies, in Southern California. He, as chairman of the Independent Operators Association, has studied the prorating agreement submitted to the Independents by the major companies and after suggesting a few changes believes that the two groups will be able to get together soon.

Besides being a bear on legal questions E. D. is a confirmed aviation enthusiast, possessing a pilot's license and owning two planes. He is only waiting the time when landing space is made available on the top of his office building to fly to work.

E. D. Reiter

* * *

Webb W. Wilson, vice president in charge of production, Byron Jackson Co., is making a thorough survey of oil producing areas in the United States in the interests of his company.

During his trip he attended the annual convention of the American Society of Steel Treaters in Cleveland, he visited the New York offices of his company and is now studying operating conditions in the Mid-Continent field after making the rounds of the International Petroleum Exposition at Tulsa early last month.

* * *

P. R. Naylor, or better known as "P. R." among his many friends in the oil industry, recently moved to the Pacific Coast as director of sales and traffic for the Rio Grande Oil Co.

He comes to his new position with 33 years of valuable experience in the distribution of oil, as he grew up with Continental Oil Co. of Colorado. He joined this company in its infancy in 1896 and resigned from the board of directors and from the executive position of general-traffic manager and director of purchases to assume his new duties.

He will have charge of sales activities, both foreign and domestic, for Rio Grande.

* * *

George Arto, in charge of crude oil purchases for the Richfield Oil Co., was married on Oct. 19 to Ellenor Lloyd McIver of Long Beach. After a honeymoon at Huntington Lake, Calif., they will be at home at 2128 Benicia Ave., Westwood, Los Angeles.

James E. Daugherty, attorney for a number of oil interests at Tampico is at his home in Santa Monica, Calif., for the holiday season having recently come from an extensive stay at Mexico City.

* * *

Gilbert Smith, general manager of the Venzuela Seaboard Oil Co. has just returned to his headquarters at Caracas after a month spent with his brother Don, at Santa Monica, Calif.

* * *

Larry Millar, well known in Mexican oil circles has been spending several weeks in Los Angeles. Larry is favorably impressed with Southern California "Beauty."

P. R. Naylor

Completions in North Louisiana and Arkansas, Week Ended October 31, 1929

LOUISIANA

Bossier Parish

Company	Well	Location	Depth	Yield
Muslow Oil Co.	Kilgore No. 1	31-23-11	3155	218 bbls. oil
John F. Woodmance	Bolinger No. 1	9-22-11	3532	Dry, abnd.

Caddo Parish

Magnolia Pet. Co.	Dillon No. 18	24-21-15	1750	Dry, aband.
Lide et al	Hunter No. 1	22-19-14	2468	20 bbls. oil
Standard Oil Co.	Hunter No. 9	8-19-14	2435	S.W. Abnd.
The Texas Co.	Hunter No. 5	9-19-14	2439	54 bbls. oil

Morehouse Parish

J. S. Harkness	Bowles No. 10	17-20-5E	2239	11,248,000 gas

Ouachita Parish

Forist and Russell	School-Fee No. 1	16-16-4E	4351	Dry, abnd.
Ark.-La. P-L Co.	Rea and Green No. 3	82-18-4E	2200	2,192,000 gas
Pipes and Mack	Slagle-Johnson No. 3	47-18-4E	2192	1,808,000 gas

LaSalle Parish

Air Life Oil Co.	Urania No. 5	18-10-2E	1517	65 bbls.

Richland Parish

W. C. Feazel	Brown No. 1	27-16-6E	2460	1M gas
Palmer Corp.	McCoy No. 1	20-16-6E	2438	6,823,000 gas
United Carbon Co.	Thornsbury No. 1	12-16-6E	2460	50,652,000 gas

Winn Parish

Company	Well	Location	Depth	Yield
Garnder, Harter and Brown	Harper No. 16	26-10-1E	1495	50 bbls. oil

West Carroll Parish

La. Gas & Fuel Co.	Marston No. 1	12-19-10E	2311	18,382,000 ft. gas

EAST TEXAS

Panola County

Ark.-La. P. L. Co.	Lewis-Werner No. 6	B. C. Jordan HRS	945	1M cu. ft. gas
D. Thomason	Tillery No. 2	Jone Tharpe HRS	2368	1M cu. ft. gas

ARKANSAS

Pope-Scotia

Ark.-La. P. L. Co.	McFadden No. 1	15-9-21	1048	34½ Mill.-gas

Ouachita Mt. Holly

Artex Oil Co.	Wilson A-1	25-15-18	2873	15-bbls. oil

Smackover

Magna. Prodn. Co.	H. McKenzie B-5	36-15-16	2006	20-bbls. oil
Phillips Pet. Co.	Scott No. 4	34-15-15	2014	280-bbls. oil
Shell Petro. Co.	Williams No. 5	34-15-15	1971	320-bbls. oil
J. P. Hawkins et al.	Goodwin No. 1	6-17-15	2575	Dry.-Abnd.
Lion O. & R. Co.	Bilyew No. A-1	8-16-15	2099	15-bbls. oil.

Completions in Oklahoma and Kansas, Week Ended November 2, 1929

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Ven-Mex	2	SWc 20-1-3 W	2798-3422	85

Cotton County

BiState	1	SW NE NW 34-1-10 W	T.D. 2251	Dry

Creek County

Central Com	1	SW SE SW 26-17-10 E	T.D. 2524	Dry
Merritt et al	1	NEc SW NE 27-18-8 E	T.D. 3356	Dry
Blackwell	12	NWc SE SW 17-17-7 E	2731-2765	45
Shell	5	SW NW NE 10-17-9 E	1988-2064	50
Ice	8	CWL SW SW 13-17-10 E	1898-1947	60
Reiter-Foster	1	SWc SE 17-17-10 E	2092-2192	45
Regal	10	CEL SW SW 13-18-11 E	1446-1556	5
Gypsy	1	SWc 16-19-9 E	2490-2521	8

Grant County

Cons. Gas Utility	1	C NE SW 2-27-3 W	4170-4335	60&3M

Hughes County

Gypsy et al	1	SW NW SE 9-6-8 E	2638-2642	42

Jefferson County

Simpson-Fell	1	NWc NE SW NE 3-7-5 W	T.D. 1701	Dry
Sigler-McGinley	1	SEc SW NW 16-7-5 W	T.D. 2267	Dry

Kay County

Wentz	17	SEc NW 17-28-1 E	3253-3258	100

Kiowa County

Eshelman	1	NEc 13-6-17 W	451-457	10
Medlin	2	NEc SW 18-6-16 W	420-423	2
Russell-Sloan	1	NWc NE 24-7-17 W	T.D. 1515	Dry

Lincoln County

Willis et al	1	C NE SW 20-17-3 E	T.D. 1500	Dry

McIntosh County

Western Natural	1	NWc SE 16-11-17 E	T.D. 848	Dry

Muskogee County

Metzger et al	10	SEc NW SW SW 1-14-18 E	T.D. 996	Dry
Lammers et al	1	SWc NW SE NE 35-15-18 E	T.D. 1196	Dry
Mazda	4	SWc NE SE NW 8-13-16 E	1633-1656	35
Mills et al	2	NEc SW SW SW 13-13-18 E	532-554	1.8M
Ray et al	1	SE NE SW 14-13-18 E	548-752	2M
Johnston et al	2	NEc 23-13-18 E	490-512	2.5M

Okfuskee County

Burke-Greis	1	SW SE NE 32-11-11 E	T.D. 3007	Dry

Oklahoma County

I. T. I. O. et al	2	SW NW SW 19-11-2 W	6018-6530	16000
I. T. I. O. et al	1	SWc NW 19-11-2 W	6020-6521	15000
I. T. I. O. et al	1	NEc NW 30-11-2 W	6085-6499	5175
Sinclair	1	NE SW NW 30-11-2 W	6211-6646	5520
Sinclair-Amerada	1	NWc SE 30-11-2 W	6194-6235	1780&70M
Shaffer et al	1	SEc 14-11-3 W	6330-6349	7450

Okmulgee County

Kirkland-Son	2	SEc NE SE 18-15-13 E	2059-2084	15
Rebold	1	SWc NE 6-15-13 E	2596-2599	100
Henneesey	7	C NW SE 17-13-13 E	1602-1620	34
McInturff	1	NWc SE SE 20-12-14 E	2187-2222	3M
Berry et al	1	SEc NW 2-13-14 E	T.D. 2891	Dry

Osage County

Winona	7	NE SW SE 20-29-9 E	1515-1542	40
Oliphant	4	SW NE NW 6-23-9 E	2135-2166	40
Okla. Power & Water	124	NEc NW 9-20-10 E	360-368	.14M

Payne County

Company	Well No.	Location	Depth	Init. Prod.
Shaffer	2	NWc NE 9-18-5 E	3573-3591	430
Pure	1	NEc SW 4-18-5 E	T.D. 3662	Dry

Pontotoc County

Texas-Pacific	2	NE NW NE 30-5-5 E	2096-2222	415
Benedum-Trees	1	NE SW NE 31-5-5 E	2469-2665	105

Pottawatomie County

Gypsy	2	SW NW SW 9-8-5 E	4049-4066	525
Sinclair	1	SW NW NW 9-8-5 E	4006-4030	795
Gypsy	6	SE NE SE 17-7-4 E	4215-4227	825

Seminole County

Sinclair-Cont	3	SW SE NW 17-9-7 E	3376-3405	10
Magnolia	1	SEc SW 20-8-7 E	4035-4050	82
Blackwell	1	SW NW SE 11-7-6 E	3152-3157	15M
Blackwell	1	SEc NW 7-6-8 E	2800-2850	210
Blackwell	1	NW SW NW 13-5-7 E	4207-4212	1410
Mid-Continent	2	NE SE NE 14-5-7 E	4295-4303	1030
Sinclair	6	NE SE SE 5-7-7 E	4195-4220	750
Shaffer	1	NWc SE 7-9-7 E	T.D. 4403	Dry
Blackwell et al	1	SWc NE 15-9-7 E	T.D 3550	Dry
Magnolia	4	SE NE NW 4-8-7 E	T.D. 3464	Dry

Wagoner County

Mitchell	2	NEc NW NE 2-16-16 E	T.D. 1585	Dry
Dixon et al	3	CSL SW NW 36-16-17 E	874-888	40

KANSAS

Butler County

Davis-Hazlett	10	SW NE SW 3-27-6 E	3147-3160	50
White Eagle et al.	1	SWc 17-25-3 E	T.D. 3294	Dry

Chase County

Polhamus et al	2	NW SW NW 35-22-9 E	2472-2537	90

Cowley County

Lewis Prod	1	SE SW NW 20-31-6 E	1999-2003	3M
Independent	1	SWc NW SW SE 15-32-4 E	T.D. 3354	Dry
Wakefield et al	1	SE SW SE 7-30-5 E	T.D. 2882	Dry

Elk County

Union	1	SW NW SE 34-20-9 E	T.D. 2412	Dry
Pure	5	NWc SE 14-31-10 E	1380-1395	15

Ellis County

Midwest Explor	36	SEc NW 12-13-16 W	T.D. 3405	Dry

Greenwood County

Empire	2	CWL NE NE 35-23-11 E	T.D. 2064	Dry
O'Neil	1	SW NE SW 9-22-11 E	T.D. 2114	Dry
Walton	1	SEc SW 6-24-13 E	1618-1634	7
Dixie-Amerada	2	SW NW NW 27-23-11 E	1853-1928	100

Lyon County

Sheedy et al	3	NE NW SW 19-21-10 E	T.D. 2416	Dry

McPherson County

Dixie-Amerada	1	SW SE NW 1-20-2 W	2942-2955	625
Shell	3	NW NE SW 1-20-2 W	2977-2978	965

Morris County

Snyder-Jones	1	NWc NE 15-17-7 E	600-615	½M

Russell County

Empire-Prairie	1	SE NE NE 23-15-14 W	3365-3369	210

Sedgwick County

Keller-Lewis	1	NWc SE 3-28-1 W	T.D. 855	Dry

Sumner County

Tidal	1	SWc 33-34-2 E	T.D. 3836	Dry

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended November 2, 1929

OKLAHOMA

Carter County

Company	Well No. & Farm	Location	
Cotton Belt	10-Rexroat	NWc NE NW SW 10-4-2 W	
Cotton Belt	11-Rexroat	SEc NE NW SW 10-4-2 W	
Woodruff et al	1-Watkins	NEc 22-1-3 W	
Magnolia	1-Hightower	SWc NE 30-1-3 W	OWD
Magnolia	4-Hightower	NE SW NE 30-1-3 W	

Cotton County

Franklin	1-Glessner	SEc NW 35-1-10 W	

Creek County

Troy	13-Cousins	C E½ NE 2-15-11 E	
Laurel	2-Williams	NW NE SE 21-16-8 E	
Mid-Cont. et al	12-Carr	NEc 26-16-9 E	
Magnolia	4-Tiger	CNL SE 17-17-7 E	
Ireland et al	2-Smith	CNL SW SE 11-17-10 E	
Pioneer-Darby	1-Barnett	SWc SE NE 18-17-10 E	
Franchot	32-Keifer	CWL SW 17-17-12 E	

Grady County

Okla. Public Serv.	3-Dryden	NEc SE NW 2-4-8 W	
Magnolia	9-Smith	SW SE NE 35-5-8 W	

Grant County

Continental et al	3-Frantz	C SW SE 35-28-3 W	

Hughes County

Magnolia	1-Oliphant	NW SE NW 18-9-9 E	

Kiowa County

Eshelman et al	1-Dittmar	NWc SE 18-6-16 W	

Marshall County

Carter	1-Davidson	NEc SW NW NW 30-5-6 E	

Muskogee County

Mussellem	6-Brook	NW NE SE 4-13-19 E	
Tidal	10-Gaines	C NE SW 5-14-18 E	

Okfuskee County

Fern	2-Turner	C SE SE 24-11-10 E	
Champlin	1-Fish	NEc NW SW 17-11-12 E	

Oklahoma County

I. T. I. O. et al	1-Jones Community	SWc 1-11-3 W	

Okmulgee County

Swindler	1-Bell	C NW SE 20-15-13 E	
Burns	15-Anderson	SWc NW NW NE 35-14-14 E	
Pine	5-Bradford	CEL NW SE 19-14-14 E	
Gardner et al	1-Brinton	C SE SE 15-14-13 E	

Osage County

Peters	8	NEc SW SE 22-27-11 E	
Kewanee	10	NW SE SE 34-27-6 E	
Peters-Prod. & Ref.	2	SEc SW 23-25-9 E	
Lewis Prod	1	NWc 23-25-7 E	
Gray et al	5	SE SW SE 34-24-8 E	
Carroll	2	SE NW SE 15-24-8 E	
Gray et al	2	NE NW NE 3-23-8 E	
Okla. Power & Water	125	NWc 9-20-10 E	

Pawnee County

Company	Well No. & Farm	Location
West-Brewer	1-White	SW SE SE 6-20-8 E
Sheders et al	1-Gifford	CWL SE NE 12-20-8 E
Seers et al	6-Wiggs	CNL NE NW 35-20-9 E

Payne County

Wheeler-Mote	1-Funnell	NEc SE 4-17-4 E

Pittsburgh County

Midwestern	1-Knoblin	SEc SW NE 11-7-18 E

Pontotoc County

Baker-Lynch	1-Harrell	NEc SE 29-5-8 E
Tidal	1-Rolls	NEc SW 28-5-8 E
American	6-Robertson	SE SW SE 19-5-5 E
Universal	3-Broughton	NW SW NW 36-5-6 E
Denver Prod. & Ref.	1-Hicks	SEc 25-5-4 E

Pottawatomie County

Moore et al	1-Townlot	SWc NW 8-9-5 E
Lambard-Hard	1-Townlot	SEc NW SE NW 8-9-5 E
Burns et al	1-Townlot	SWc SE NW 8-9-5 E
Gypsy	1-Fehlig	SWc 4-8-5 E
Empire	4-Smith	NW SE NE 8-8-5 E
Pure et al	1-Latimer	NE NW NW 21-7-4 E

Seminole County

Blackwell	1-Joan	SWc NE 15-9-7 E
Carter et al	3-Slick	SE NW SW 11-9-6 E
Carter et al	3-Strothers	NW NE SW 11-9-6 E
Carter et al	3-Mayhue	NW SE SW 11-9-6 E
Shell	8-Hopper	SEc NE 19-9-6 E
Magnolia	1-Grounds	NEc NW 23-9-5 E
Magnolia	1-Jackson	SW SE SE 14-8-7 E
Indep. et al	1-Johnson	NWc 20-8-6 E
Gypsy	2-Coker	NE SW SW 2-8-5 E
Mid-Continent	2-Yarhola	NW SW NE 8-7-7 E
Gypsy	2-Willie	NWc NE 24-7-6 E
Empire	4-Coker	SEc SW 13-7-6 E
Mid-Continent	1-Harjo	SE NE NE 14-5-7 E

Stephens County

Heydrick et al	1-Glenn	SEc SW 5-1-8 W
Ven-Mex et al	9-Nigh	CSL NE NW 34-1-8 W
Ellis Drlg.	9-Nigh	SWc NW 34-1-8 W
Carter	2-Ruckstashel	NE NW NE 11-1-4 W
Smythe-Nash	1-Johnson	NEc 30-2-8 W

Tulsa County

Wise-Misner	1-Smith	SEc NW 28-16-14 E
Brown et al	4-Oswald	CWL SE NW 6-17-13 E
Martin et al	1-Hornacker	NWc SW 27-17-13 E
Bingham et al	2-Davis	NWc NE 24-17-14 E
Bingham et al	1-Parker	SEc SW NW 24-17-14 E
Little Ed	3-McKim	NEc SE 30-17-14 E
Scott-Christie	1-Billy	SWc SE NE 32-17-14 E
Mays Bros.	1-Robinson	NEc SW SW 19-19-15 E

(*Continued on Page 47*)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended November 2, 1929

(Continued from Page 46)

Wagoner County

Company	Well No. & Farm	Location
Gillett et al.	7-McIntosh	CEL NW SE 25-17-16 E
Orr et al.	3-Grayson	SE NE SW 34-17-18 E
Keener	1	SEc SW 33-17-19 E
Horner	1-Luckey	SW NE SW 35-18-17 E

KANSAS

Barber County

Barbara	1-Lanker	C SW SE 1-33-13 W

Butler County

Slick-Pryor-Lockhart	1-Metzger	NEc NW 10-28-3 E

Chase County

Marland Inc.	1-Attenmus	SEc NE 33-18-8 E

Cowley County

Lewis Prod. et al.	1-Sitton	SW SE NE 30-31-6 E

Edwards County

Barnsdall	1-McCarthy	NWc NE 31-25-17 W

Elk County

Pure	7-Chaffin	NW SW SE 14-31-10 E
Winemiller et al.	2-Mullendore	NE SW SW 3-30-9 E

Greenwood County

Mendenhall et al.	2-Tatman	CNL NE SW 9-25-13 E
Empire	6-Hoggart	CWL SE NW 9-25-13 E
Empire	5-Hoggart	C SE NW 9-25-13 E
Sheedy et al.	4-Sharp	SW NE NW 5-24-13 E
Marland Inc.	1-Moore	CWL SE SW 24-24-9 E
Dixie-Amerada	3-Ellis	NE NW NW 27-23-11 E
Simmons-Rhodes	3-Patterson	SE SW SW 22-23-11 E
Empire	7-Edwards	NE SE SE 21-23-11 E

Lyon County

Balliere et al.	1-McKee	SWc SE 32-21-11 E

McPherson County

McPherson	1-Koechn	C SE 12-20-2 W
McPherson	1-Wallace	C SW 12-19-2 W
Derby	1-Giffin	SEc SW 11-19-2 W

Reno County

Gypsy	1-Hudson	C SE NE 27-24-10 W

Russell County

Jamot-Brown et al.	1	NEc 18-14-15 W

Sedgwick County

Wentz	5-Bright	NW NE NW 1-26-1 W
Deal et al.	1-Johndro	NEc SW SE SW 15-26-2 E
Shell	1-Southwestern	SW SE SW 2-27-1 W
Shell	1-Schwertner	NE NW NW 11-27-1 W
McCullough	1-Buckles	NWc SE 3-28-1 W

Sumner County

Payne	1-Frederick	NE SW SE 12-31-2 E

Woodson County

Elbar	1-Bohus	NEc NW 31-23-14 E

TEXAS
NORTH CENTRAL & EAST CENTRAL

Anderson County

				Survey
Humble	1-Birdwell			Bowlin

Brown County

Owens Inc.	6-Cannon	Blk-3		Arenbeck
Gordon	3-Cannon	Blk-3		Arenbeck
Cranfill-Reynolds et al.	1-McDonald	Blk-60		Carrier
French et al.	1-Fry	Sec-36		HT&B
Smith	10-George			Chaddick
Buder	5-Kesler	Sec-42		Kesler
Buder	6-Kesler			Kesler
Humble	9-Kilgore	Sec-3 Blk-789		Delgado
Texas	4-Johnson			Nix
Lloyd	30-Collin	Blk-139		Smith

Callahan County

Union Oil Co. of Nevada	1-Alexander	Sec-23		ET
States	1-Allen	Sec-81		BBB&C

Comanche County

Owens Inc. et al.	8-Mathews			Sullivan
Owens Inc. et al.	1-Sanger Bros.	Blk-15	Tampasas Co.	Sch. Ld.
Putram	1-Owens	Sec-73 Blk-2		H&TC

Coleman County

Kanon	1-Pfluger	Blk-280		Shirlock
Yinghing et al.	1-Pfluger	Blk-380		Shirlock
Joiner et al.	1-Bartholomew	Blk-279		Farris
Campbell-Gwinnup	1-Rhon	Sec-76 Blk-1		GH&H
Pollard-Forster		Sec-11 Blk-1		GH&H

Eastland County

Lewis	3-Halcombe	Blk-4		H&TC
Rochell	1-Hightower	Sec-29 Blk-2		H&TC
Arab	1-Brunett	Sec-13 Blk-4		H&TC
Butler	1-Green	Sec-47 Blk-3		H&TC

Hill County

Mayhaw-Pennington	1-Nelson			Franks

Jack County

Combs-Rogers	2-Plemmons			Smith
Meddress-Brokers	1-Keykendall			Hughson
Upham	2-Keyson			Toby

Jones County

Cranfill-Reynolds-California	1-Stephens			Mullen et al.
Mid-Tex	1-Minton	Sec-41 Blk-15		T&P

Limestone County

Fentress-Oliver	1-Park			Farmer

Navarro County

Haskell et al.	1-Morrow			Curry

Parker County

Watres Drlg.	1-Davis	Sec-2550		TE&L

Palo Pinto County

Texas Pacific	158-Stewart et al.	Sec-71 Blk-4		T&P
Rogers-Ridle	1-Rider	Sec-2005		TE&L

Stephens County

Conway Bros.	13-Harmon	Sec-51 Blk-6		T&P
Hickock	5-Carteret	Sec-10		LAL

Shackleford County

Company	Well No. & Farm	Location	
Tannehill	27	Blk-11	T&P
Big States	14-Webb et al.	Sec-17 Blk-11	T&P
Big States	13-Webb et al.	Sec-17 Blk-11	T&P
Texas Cons.	4-Reynolds	Sec-23 Blk-11	T&P
Merry Bros.	1-Davis	Sec-14 Blk-12	T&P
Grisham-Hunter	4-Davis	Sec-20 Blk-13	T&P
Southern Pet. Explor.	6-Dyer	Sec-84 Blk-12	T&P
Dull-Earls	3-Mathews	Sec-32	ET
Tannehill et al.	6-Mathews	Sec-34	ET
Ducker et al.	1-Mathews	Sec-56	ET
Van Randle et al.	2-Dodson	Sec-1	BAL
Frazzen-Smalley	1-Alexander	Sec-580	TE&L

Taylor County

Condor	1-Allen	Sec-220 Blk-64	H&TC

Throckmorton County

Combest	2-Hughes	Sec-702	TE&L
Bearman	1-Lidbetter		Riddle
Combest	1-Lidbetter	Sec-2	Riddle
Bearman	1-Tukon	Sec-2	SP

NORTH TEXAS

Archer County

Consolidated	1-Beardon	Abst-364	Riley
Douglas	3-McClure	Blk-13	Crawford
Consolidated	1-Kemp et al.	Blk-5	KWVFL
Stumpf et al.	-Moss	Sec-1 Abst-199	H&TB
Barnsdall	17-Wilson	Abst-179	Howard
Shappell	13-Lyles	Sec-7	Hooper et al.
Payne-American	1-Wilson	Sec-114 Blk-1	ATNCL
Burns	1-Graham	Abst-381	Richards
Key-Leath	1-Logan	Abst-651	Taylor
Duke et al.	1-Young	Sec-2426	TE&L
Petroleum Prod.	13-Kunkel	Sec-3 Abst-51	BBB&C
Madden-Stumpf	1-Vernon	Abst-394	Sanderford

Cooke County

Danciger	13-Huggins		SP
Danciger	14-Huggins		SP
Danciger	15-Huggins		SP
Lloyd	B2-Wheelock		Underwood

Grayson County

F. H. E. Oil Co.	1-Finker		Hull

Wichita County

Everetts-Jamison	2-Gibson	Blk-302	Waggoner

Wilbarger County

Staley-Wynn	S3	Sec-33 Blk-4	H&TC
Waggoner	J13	Sec-25 Blk-4	H&TC
Waggoner	P1-Waggoner	Sec-35 Blk-2	H&TC
Waggoner	P2-Waggoner	Sec-35 Blk-2	H&TC
Waggoner	4-Waggoner	Sec-18 Blk-4	H&TC
Consolidated	T1-Waggoner	Sec-23 Blk-4	H&TC
Bradstreet	C4-Waggoner	Sec-31 Blk-4	H&TC
Martin et al.	1-George		Poitevent
HiLand	2-George	Sec-29	Poitevent
Wichison	2-Waggoner	Sec-21 Blk-4	H&TC
Cons. Martin	1-Dill	Sec-82 Blk-14	H&TC
Grayback Dev.	3-Waggoner	Sec-49 Blk-2	H&TC
Staley-Wynne	G16-Waggoner	Sec-32 Blk-4	H&TC

Young County

Sun	13-Kunkel	Blk-4	BBB&C
Williams et al.	1-Price	Sec-257	TE&L
Allday-Beavers	1-Johnson	Blk-6	Sergeant
Parks et al.	7-Carpenter		Sergeant
Bridwell	5-Cullers		Hyatt
Jacob	1-Parsons	Sec-46	Jones
Pitzen-West	1-Morrison		Hammond

PANHANDLE

Carson County

Texas	3-Quinn	Sec-7 Blk-9	I&GN
Gulf Prod.	5-Cooper	Sec-5 Blk 9	I&GN
McIlroy	1-Block	Sec-112 Blk-4	I&GN
Ham Oil Co.	1-Cooper	Sec-5 Blk-9	I&GN

Gray County

Texas	16-Saunders	Sec-3 Blk-1	ACH&B
Constantine et al.	1-Wilson	Sec-1	BS&F
Queen	1-Lovett	Sec-35 Blk-B-2	H&GN
Key Oil Co.	1-Key	Sec-1	B&B

Hutchinson County

Danciger	3-Moore	Sec-125 Blk-4	I&GN

Wheeler County

Murchison-Fain	5-Close	Sec-76 Blk-23	H&GN
Upham	6-Gootch	Sec-81 Blk-23	H&GN
Staley-Wynne	1-Hicks	Sec-53 Blk-17	H&GN

WEST TEXAS

Crane County

Gulf Prod.	70-McElroy	Sec-201 Blk-F	CCSD

Culberson County

Grisham-Hunter	3-Seay	Sec-16 Blk-59 Twp-7	T&P

Fisher County

Landreth Prod.	2-Cooper	Sec-116 Blk-1	H&TC
Roeser-Pendleton-Amerada	11-First Nat'l. Bk. of Waco	Sec-204 Blk-1	BBB&C

Glasscock County

Kirby et al.	2-Baker	Sec-22 Blk-33 Twp-2 South	T&P
Lion	3-Coffee	Sec-22 Blk-33 Twp-2 South	T&P

Howard County

Sweeney et al.	7-Chalk	Sec-124 Blk-29	W&NW
Ward	20-Roberts	Sec-137 Blk-29	W&NW
Moody	32-Roberts	Sec-137 Blk-29	W&NW
Moody	31-Roberts	Sec-137 Blk-29	W&NW

Pecos County

California	6-Smith Lse-1	Sec-37 Blk-194	TC
Skelly	1-Univ. Bower	Sec-31 Blk-16	Univ.
Landreth Prod. et al.	1-I Univ.	Sec-24 Blk-18	Univ.
Landreth Prod.	2-McDonald	Sec-46 Blk-12	H&GN

Upton County

Texas Pacific	15-Lane	Sec-5	GC&SF
Gulf Prod.	69-McElroy	Sec-185 Blk-F	CCSD

Completions in Texas, Week Ended November 2, 1929

NORTH CENTRAL & EAST CENTRAL

Anderson County

Company	Well	Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Pumble	2	Neches River Bed	Sessna		T.D. 3831	Dry
Humble	4	South Pine Lumber Co.	Lusk		T.D. 4730	Dry

Brown County

Baker Bros	3	White	Honeycutt	Blk-623	T.D. 1175	Dry
Davis et al	1	Dunn	Curlong	Blk-151	T.D. 1320	Dry
Gordon	1	Cannon	Arenback	Blk-3	T.D. 1300	Dry
Herring et al	1	Laymon	HT&B	Sec-41	T.D. 1346	Dry
Paramount Oil Royalties et al.	1	Shore	Barrister	Blk-627	T.D. 1350	Dry
Buder	4	Kesler	Kesler	Sec-42	1320-1344	250
Humble	8		Delgado	Sec-3 Blk-789	1150-1173	10
Lloyd	29	Collier	Smith	Blk-139	414-430	10
Owens Inc	5	Cannon	Arenback		1146-1155	20
Smith	9	George	Chaddick		1321-1335	520
Texas	8	Kesler	Kesler	Sec-42	1290-1308	260
Texas	9	Kesler	Kesler	Sec-42	1282-1302	235

Callahan County

Beams	8	Jackson	ET	Sec-14	T.D. 938	10
Moutray	51	Hickman	I&GN	Sec-1	T.D. 714	Dry

Coleman County

Shallarass et al	1	Bingham	McElreath	Blk-54	T.D. 1150	Dry
Kynard	1	McDermont	Canal Co. Sch. Ld. Sec-28		T.D. 470	Dry
Eastland et al	1	Kenney	Cochran	Sec-3 Blk-269	T.D. 3340	Dry
Midwest Explor.	5	Keeney	Cochran	Blk-269	1998-2021	35
Smith	3	Morris	Woods	Blk-483	1980-2021	150
Tarver-McKanna	4	Crowder	Woods	Blk-483	1990-2015	400
White Eagle	7	Morris	Webber	Sec-25 Blk-722	2017-2038	150
White Eagle	12	Morris	Webber	Sec-25 Blk-722	1993-2018	125
White Eagle	16	Morris	Webber	Sec-25 Blk-722	1991-2025	150
White Eagle	24	Morris	Webber	Sec-26 Blk-722	1991-2026	198

Eastland County

Arab-Teatsworth	2	Horbin	H&TC		T.D. 1548	17
Conway-Chapion	6	Simmons	McClennon Co. Sch. Ld. Blk-27		T.D. 1161	Dry
McGholson	1	Collins	H&TC	Sec-18	T.D. 3142	Dry

Falls County

Southern	1	Barclay	Helzley		T.D. 1618	Dry

Haskell County

Barnsdall	1	Roberts	Moss	Sec-170	T.D. 2400	Dry

Hill County

Batts-Harper	1	Holderman	Sullivan		T.D. 667	35

Jack County

Panhandle	4	Smith	Hughson		3062-3071	95
Boler et al	1	Raley	Hughson		3144-3152	300
McGuire	1	Clayton	Mathews		2890-2898	14M

Leon County

Reiter et al	1	Busby	Marque		T.D. 3014	Dry

Palo Pinto County

Texas Pacific	159	Stuart	T&P	Sec-71 Blk-4	1487-1603	150
Texas Pacific	160	Stuart	T&P	Sec-71 Blk-4	1590-1609	150
Walker et al	1	Ready	Ashworth		2994-2999	2¾M

Shackleford County

Dull-Earls	8	Mathews	ET	Sec-32	1147-1154	45
Tannehill	25	Newell	T&P	Sec-11 Blk-11	905-935	30
Dull-Earls	10	Mathews	ET	Sec-32	1143-1155	45
Roeser-Pendleton	47	A61	ET		T.D. 1250	Dry
James	2	Newell	ET	Sec-87	T.D. 1585	Dry
Wells et al	1	Davis	T&P	Sec-17 Blk-14	T.D. 830	Dry
Owens Inc	1	Nail	ET	Sec-98	T.D. 1435	Dry
Basom et al	1	Nail	ET	Sec-24	T.D. 1060	Dry
Richardson Bros.	1	King	ET	Sec-214	T.D. 1917	Dry
Moutray	1	Moberly	T&P	Sec-49 Blk-11	T.D. 1101	Dry
Reading Bros. et al.	1	Dawson et al.	ET	Sec-173	T.D. 1806	Dry

Stephens County

Clark	1	Creagh	T&P	Sec-2 Blk-8	T.D. 4524	Dry
Conway Bros.	1	McClure	T&P	Sec-26 Blk-6	T.D. 2111	Dry
Lone Star	1	Townsend	Sec-1	Blk-C	T.D. 4088	Dry
Shaw	1	Manning	T&P	Sec-43 Blk-4	3177-3299	90
Loftin-Jordan	1	Smith	BAL	Sec-1	1850-1861	3¾M
Hickock	2	Hamil	LAL	Sec-5	3275-3310	5

Throckmorton County

Shappell	1	Thomason	Upsham Co. Sch. Ld. Sec-27		1286-1308	15
Shappell	2	Thomason	Upsham Co. Sch. Ld. Sec-27		1256-1267	35
Shappell	3	Thomason	Upsham Co. Sch. Ld. Sec-27		1248-1264	65
Combest	1	Hughes	TE&L	Sec-902	328-336	16
Bridwell-Heydrick	1	Thomason	Upsham Co. Sch. Ld. Sec-154		T.D. 1652	Dry

Taylor County

Condor	1	Brookerson	Coody		T.D. 2504	Dry

NORTH TEXAS

Archer County

Gwynn	7	Thompson	ATNCL	Sec-20 Blk-16	1580-1591	18
Pet. Prod.	12	Kunkel	BBB&C		1108-1132	75
Gribin	2	Hennig	Meade	Blk-21	T.D. 1464	Dry
Heydrick-Stumpf	2	White	ATNCL	Sec-40 Blk-15	T.D. 1710	Dry
M & U Oil Co.	2	Kunkel	Stell		T.D. 1188	Dry
Panhandle	1	Stewart	Meade	Blk-51	T.D. 1560	Dry
Perkins-Cullum	1	Lauster	SP		T.D. 1425	Dry

Cooke County

Hooser et al	1	Schifflet	Garcia		T.D. 2107	Dry
McElreath-Suggett	1	Harris	SP		T.D. 2006	Dry
Coline	3	Hufvins	SP		1143-1147	58
Danciger	10	Huggins	SP		1138-1141	101
Danciger	11	Huggins	SP		1120-1123	12

Grayson County

McKinney-Rogers	1	Taylor	Allen		T.D. 760	Dry

Montague County

Farlyn	3	Cunningham	Norten		912-918	20

Wichita County

Keller	4	Waggoner	Willis	Blk-1	T.D. 1763	Dry
Riner-Omahundro	1	Chilson	DCSL	Sec-4 Blk-7	T.D. 800	Dry
Rowe et al	3	Waggoner	GCVSF		T.D. 1492	Dry

Wilbarger County

Bass-Dillard et al.	B1	Waggoner	H&TC	Sec-10 Blk-13	T.D. 1946	Dry
Brownlee-Ferguson	1	Waggoner	H&TC	Sec-36	T.D. 1960	Dry
Consolidated	S1	Waggoner	H&TC	Sec-37 Blk-4	T.D. 1933	Dry
Hemisphere	1	Castleberry	H&TC	Sec-67 Blk-14	T.D. 2650	Dry
Rather	1	Watts	H&TC	Sec-64 Blk-15	T.D. 3403	Dry
Sumner-Morison	1	Waggoner	H&TC	Sec-8 Blk-4	T.D. 2450	Dry
Ven-Mex	G1	Waggoner	SP	Sec-1	T.D. 1931	Dry
Staley-Wynne	B7	Waggoner	H&TC	Sec-25 Blk-4	1887-1892	90
Staley-Wynne	M1	Waggoner	MEP&P	Sec-39	2411-2424	148
Texas	D4	Waggoner	MEP&P	Sec-43	2390-2396	85
Ven-Mex	F1	Waggoner	H&TC	Sec-8 Blk-4	1940-1942	85

Young County

Forbes et al	1	Williams	Morris		3058-3078	5
Scott-Nancer et al.	5	Payne	Smith		2100-2140	50
Parker et al	1	Cullers	Stennett		538-562	20
Trinity et al	2	Barrett	Sergeant		572-587	5
Munroe	2	Chambers	T&NO	Sec-2	T.D. 2803	Dry
Powell	7	Allen	Lynch		T.D. 2231	Dry
Bowen	1	Neeley	TE&L	Sec-176	T.D. 1152	Dry
Bundy	1	Johnson	Sergeant	Blk-10	T.D. 562	Dry
Panhandle	3	Prideaux	I&GN		T.D. 750	Dry
Perkins-Cullum	4	Lemmons	BBB&C		T.D. 760	Dry
Terrell	1	Latimore	TE&L	Sec-253	T.D. 755	Dry
Moran et al	1	Hoffman	Overett		T.D. 765	Dry

PANHANDLE

Carson County

Continental	1	Blocks	I&GN	Sec-111 Blk-4	3025-3050	190

Gray County

Danciger	4	Beck	H&GN	Sec-28 Blk-B-2	2843-2848	537
Dodson-Shell	1	Saunders	I&GN	Sec-40 Blk-3	T.D. 3110	800
Osborne et al	1	Morse	H&GN	Sec-1 Blk-26	2572-2670	34
Texas	3	Bull	H&GN	Sec-2 Blk-B-2	2675-2710	24½M

Wheeler County

Upham	5	Gootch	H&GN	Sec-81 Blk-23	1440-1590	40M
Wishkamper et al.	1	Guest	H&GN	Sec-28 Blk-17	T.D. 2805	Dry

WEST TEXAS

Glasscock County

Kirby et al	1	Phillips	T&P	Sec-23 Blk-33	2285-2292	671
Midwest Explor.	1	Edwards	T&P	Sec-20 Blk-34	T.D. 3265	Dry
Houston	1	McDowell	T&P	Sec-30 Blk-33	T.D. 2603	Dry

Howard County

Witherspoon-Glasscock Bros.	3	Abrams	T&P	Sec-3 Blk-32	2420-2442	100
Ward	14	Roberts	W&NW	Sec-37 Blk-29	1367-1386	175
Shell	1	Settles	W&NW	Sec-35 Blk-29	2950-2954	581
Howard	3	Abrams	T&P	Sec-5 Blk-32	2250-2280	1000
Humble	5	Clay	W&NW	Sec-38 Blk-29	1820-1870	145
Continental	3	Kloh	T&P	Blk-33	2181-2238	1626

Mitchell County

Gibson-Johnson	1	Scott	Lavara Nav. Co. Blk-19	Sec-11	T.D. 806	Dry

Pecos County

Tidal	3	Univ.	Univ.	Sec-17 Blk-20	T.D. 1390	Dry
Tidal	2	Univ.	Univ.	Sec-3 Blk-18	T.D. 2041	Dry
Sun	2	Univ.	Univ.	Sec-8 Blk-17	T.D. 1602	Dry
Moncrief et al	1	Univ.	Univ.	Sec-27 Blk-18	T.D. 2098	Dry
Taylor-Link	4	Univ.	Univ.	Sec-31 Blk-16	1605-1626	117

Reagan County

Skelly	4	Grayson	Univ.	Sec-33 Blk-8	3051-3072	120

Winkler County

Cranfill-Reynolds	C2	Hendricks	PSL	Sec-33 Blk-26	T.D. 2922	5000

Completions in California, Week Ended October 26, 1929

Long Beach

Company	Well No.	Location	Depth	Initial Prod.
Bush-Voorhis	Bell 2		6997	256
Bailes and Meyers	Reedman 1		7171	940
Brown, Allen Oil Co.	James 1		7252	625
Dabney-Johnson Oil Corp.	No. 37		6234	256
Delaney Petroleum Corp.	Finneberg 2		7368	78
Keck Synd	Herwick 11		7125	425
McMillan Pet. Co.	No. 8		6331	70
Seeple, Joseph	Maltby 6		7385	647

Santa Fe Springs

Associated Oil Co.	Fulton 4		8330	2160
Commodore Oil Co.	Landle 5		7900	1000
General Pet. Corp.	S. F. S. 146		5335	1035
Standard Oil Co.	Walker 15		7903	725
Star Petroleum Co.	S. F. S. 2		6250	2475
Star Petroleum Co.	S. F. S. 4		7691	1690

Company	Well No.	Location	Depth	Initial Prod.
Union Oil Co.	Bell 32		6915	406
Union Oil Co.	Bell 45		6983	1513

Huntington Beach

Grant, Hugh	Texcal 3		3901	85

Elwood

Barnsdall-Rio Grande	Bell 8		3621	4650

Maricopa Flats

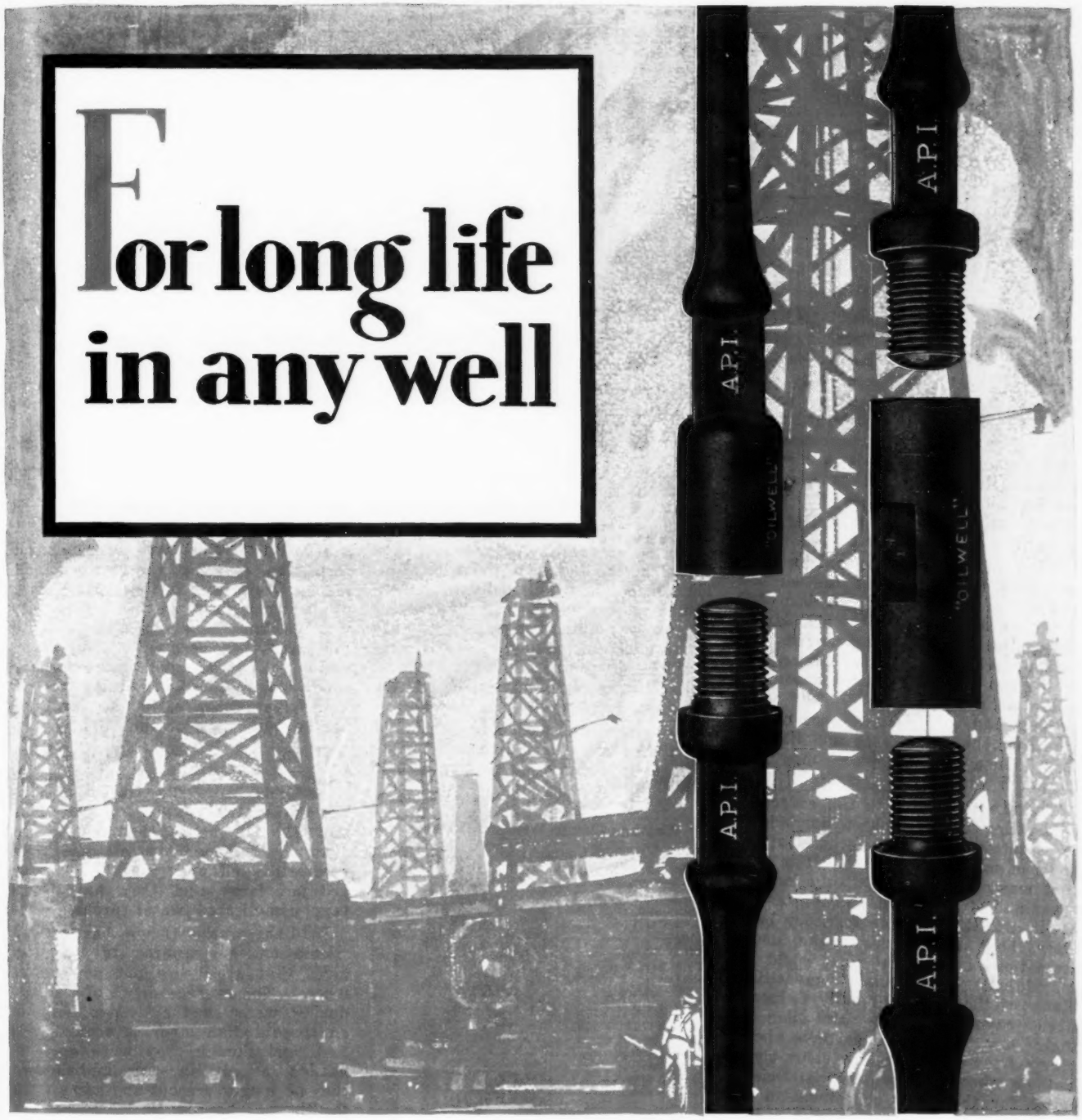
North Amer. Cons. Oil Co.	Kerckhoff 1		3389	200

Mt. Poso Creek

The Texas Co.	Vedder 3		1662	695

Kern Front

Chanslor-Canfield Midway Oil Co.	No. 28		2151	150



"OILWELL" A. P. I. Imperial Sucker Rods are made from one-piece, weldless, heat-treated steel and carry the A. P. I. stamp which guarantees their strict conformity with the standards adopted by the American Petroleum Institute. All rods are upset, and can be furnished in two styles—box and pin or pin and pin with couplings. Complete stocks are available at all district points. For further information inquire at any "Oilwell" branch store.

907

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Wildcatters Still Like the Osage Despite Doubts of Majors

By William F. Lowe
N. P. N. STAFF WRITER

TULSA

OPERATORS do not seem to agree on the future possibilities of the Osage. Any number of them insist that the finding of new pools in the western half of the county is decidedly problematical. Still, there are others who are willing to make the play for it and who backed their judgment at the recent Pawhuska sale by paying fairly high prices for some acreage.

Many of the major operators were not even represented at the auction and of the 19,220 acres sold, but 6660 acres were purchased by the larger companies. Those who did not buy are rather inclined to look askance at those who did, but the superior air is lost on the purchasers. They seem to have had very definite reasons for acquiring the new leases and the future drilling of these pieces may justify their ventures.

The skeptics point to the extensive wildcatting that has been carried on in recent years and its failure to find pools of major importance. It is true that many of the most likely looking areas and structures have been tested. Wells drilled in outside territory have often had oil shows in the usual formations but not in what could be considered commercial quantities. Many of the isolated small producers have proven of little value due to their low vitality and have been plugged for dry holes in a short time. But do these things offer sufficient cause for the utter condemnation of the area?

The answer to part of the above question in the minds of the men who still have faith in the Osage probably lies in the fact that structure does not play so large a part there as elsewhere. Wildcat wells have, for the most part, been drilled on structures that were mapped either on surface outcrops or by geophysical methods. Usually their sections are good and the geologic predictions borne out, but the sand conditions were not right for oil accumulation.

The county has several examples of the failure of production to be controlled by structural conditions, with the Burbank field the most outstanding. In that pool, porosity of the sand body or lens conditions within the producing horizon, was the deciding factor in the yield of a well. The field was characterized by irregular and erratic concentrations of oil in rather small areas. The same thing may be said for most of Osage county.

Drilling the tops of structures has, on several occasions, found the sands so tight that heavy shots failed to bring out oil, gas or water. Yet the flanks of the same folds have produced all three in quantity.

The hope of finding one of these productive lenses is probably one of the principal reasons for the continued appeal of the Osage to the wildcatter. That such lenses will be small in extent is a reasonable conclusion, for the large number of dry holes has put limits on many areas. A find would be worth the effort for the cost of drilling is fairly reasonable in the shallower territory.

The principal producing sands of the Osage are the Bartlesville, Burbank and Hominy. The last named is even more erratic than the others. Pools in this sand in the southwestern part of the county are small in extent, as they seldom exceed 40 acres. There are occasional large wells with initials above 5,000 barrels, and though the decline is very rapid, the ultimate recovery is sufficient to warrant drilling in most cases. The Hominy sand is correlated by most geologists as being lower Simpson of middle or lower Ordovician age.

The Bartlesville sand is a blanket formation covering the eastern half of the Osage and is the most prolific producing horizon in the county. Its western limit is along a north-south line across the center of the reservation. Together with the Burbank sand, which is a little below in the Pennsylvania series, it has furnished nearly four-fifths of the oil produced.

There are several pools producing from the Wilcox or from the Silicious lime with the Gilliland, 23N-7E, the Pettit, 23N-8E, and the Boston, 21N-7E, being the best known examples. They have all had good recoveries and high initials but they are not large and they have some very complicated water problems.

Drilling in the Osage has been a simple affair compared to the deep holes that are being put down elsewhere. The average depth of the producing wells in the deeper horizons on these Indian lands is around 3000 feet, and though they were once regarded as drilling accomplishments they no longer present any serious difficulties. Where wells of twice that depth call for a financial outlay of upwards of $100,000, these holes can be put down for less than half that amount, even as wildcats. That is, reasonable luck.

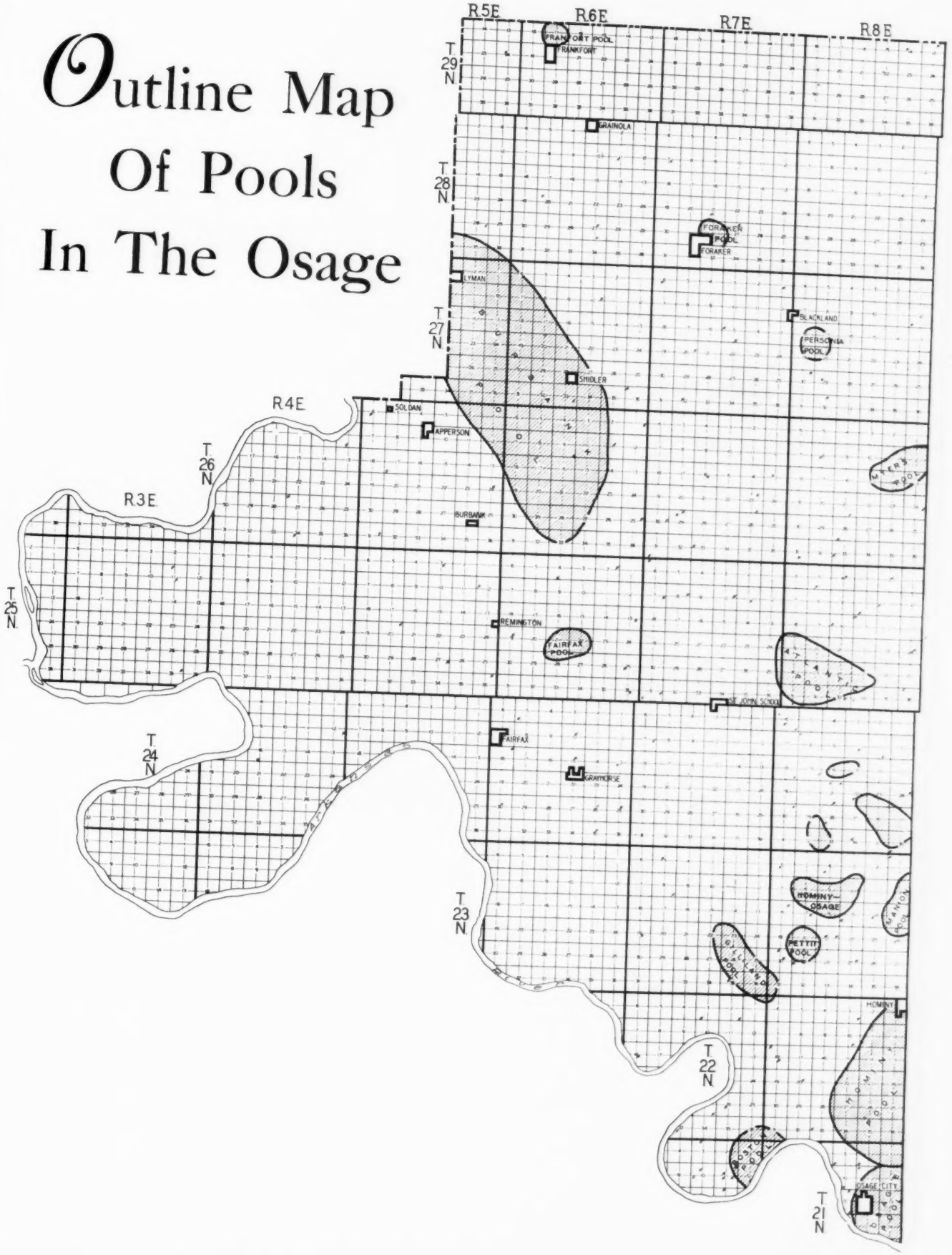
The Osage is one of the few remaining places in the state of Oklahoma, or in the whole Mid-Continent, where shallow drilling still has possibilities. The smaller operators realize this and therein lies a great deal of the continued appeal of the territory. It is good sensible reasoning, for the number of small companies that can afford to put $100,000 in a single exploration hole are few. It is too much of a gamble for most operators.

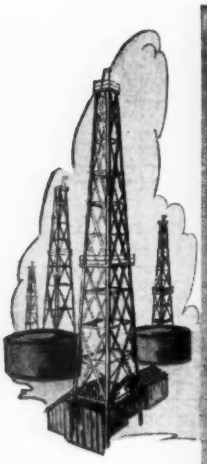
There is another thing that helps to keep up the interest in these lands, and it too, is a money saver. It is about the only place in the country

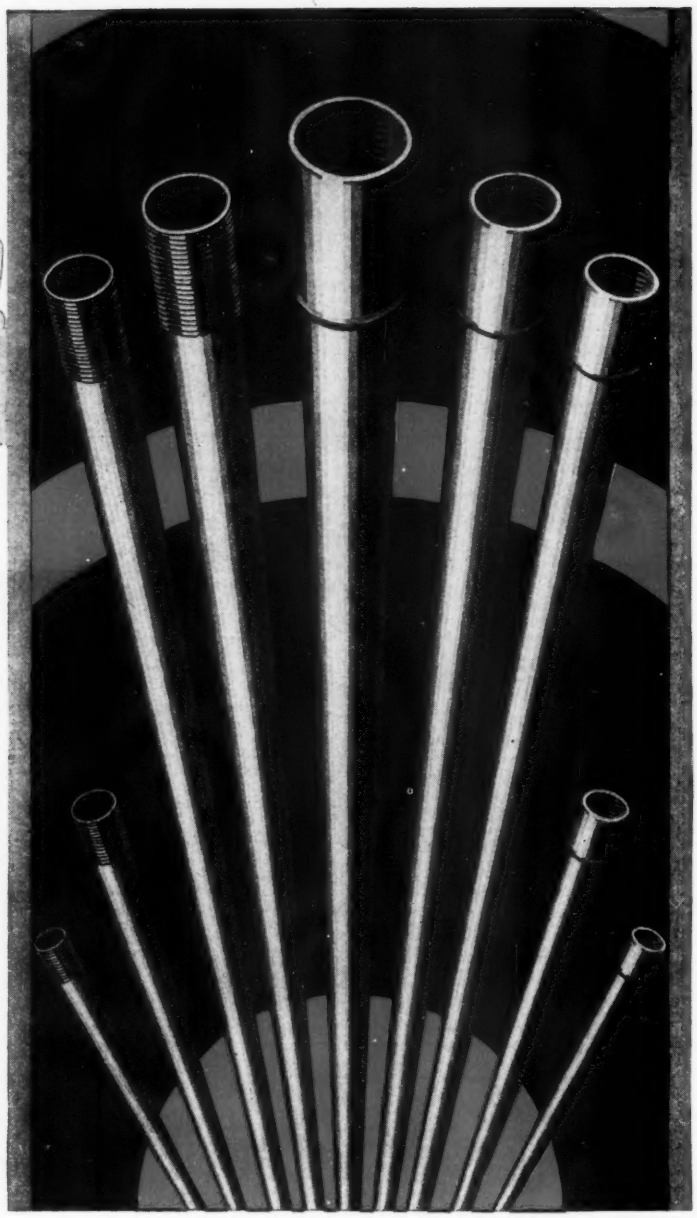
Western Osage Wildcat Dusters

Company	Location	Total Depth
Devonian-Kay Co	SE SW 30-24N-3E	4072
Continental	NE NW 11-25N-3E	4070
Continental	NW SE 11-25N-3E	4131
Skarb-Star-Joel	SE NE 35-25N-3E	4008
Barnsdall	SE SW 16-24N-4E	3983
The Texas Co	NE SW 34-26N-4E	3727
Sinclair	NW NW 27-26N-4E	3989
Skelly	SE SW 12-26N-4E	3585
Gypsy	NE NE 36-25N-5E	3610
Gypsy	NE SE 27-25N-5E	3608
Continental	NE NE 20-25N-5E	3647
Midland Oil	SW NW 12-25N-5E	3454
Barnsdall	NW SE 3-25N-5E	3077
Continental	SE NE 31-26N-5E	3837
Continental	SW SW 17-26N-5E	3788
Kay Co. Gas	SW NE 35-24N-6E	3260
Kay Co. Gas	SW NE 30-24N-6E	3400
Devonian	SW NE 26-24N-6E	2890
Mid-Kansas	NE NE 18-24N-6E	3344
Continental	SW NE 15-24N-6E	2838
Gilliland	SW NE 10-24N-6E	3000
Western American	NW SE 36-25N-6E	3227
Amerada	NE SW 25-25N-6E	2910
Barnsdall	SW NE 19-25N-6E	2950
McCoach Oil	NW SE 13-25N-6E	3309
Kay Co Gas	SE SW 4-25N-6E	3349
Prairie	SE NE 2-25N-6E	3247
Laurel	SW NE 27-28N-6E	3010
Gypsy	NE NE 11-21N-7E	3010
Devonian	NW SE 18-22N-7E	3300
The Texas Co	SW SW 3-22N-7E	2545
Prairie-Peters	NW SE 19-23N-7E	3221
Gypsy	SE SE 8-23N-7E	3178
Sinclair	SE NW 5-23N-7E	3120
Phillips	NE SE 7-24N-7E	2838
Devonian	NE SE 31-25N-7E	3010
G. W. Stephens	NE SE 7-25N-7E	2778
Gypsy	NW SE 11-25N-7E	3120
Mid-Continent	SE NE 10-25N-7E	3157
I. T. I. O.	SE NE 8-25N-7E	3175
Duffield-Howard	SW NW 33-26N-7E	3101
Oliphant	C NW 29-26N-7E	3100
White Eagle	NE 23-26N-7E	2860
Continental	SW SW 17-26N-5E	3788
Kennedy et al	NW SE 16-26N-7E	3223
Wrightsman	SE NW 13-26N-7E	2934
Mid-Continent	SE NW 32-27N-7E	3239
Gypsy	SW NW 15-27N-7E	3266
Sinclair	NE SW 6-27N-7E	3615
Carter	NW SE 1-27N-7E	2907
Continental	NW SW 33-26N-8E	2892
New England	SE 31-26N-8E	2973
The Texas Co	SE 31-26N-8E	2830

Outline Map Of Pools In The Osage







SPANG

WELDED

CASING
STANDARD PIPE
LARGE O. D. PIPE
LINE PIPE
DRIVE PIPE
DRILL PIPE

Sizes ⅛ inch to 24 inch O. D.

STANDARD

SEAMLESS

CASING
TUBING
DRILL PIPE
(Regular and Heat Treated)
LINE PIPE
STILL TUBES

Sizes 2 inch to 13⅜ inch O. D.

Since 1828

STRONG yet DUCTILE,

No matter what you consider important in pipe, Spang Pipe has it. Take strength, for example. Every length of "Spang" Welded and "Standard" Seamless Pipe is tested to withstand pressures higher than you will ever subject them in service—That means the maximum factor of safety for any emergency.

Another thing, you will like about Spang Pipe is the soft, easy working quality of the special steel—saves time and labor.

SPANG, CHALFANT & CO., INC.

General Offices: **CLARK BUILDING, PITTSBURGH, PA.**

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.

Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. ***Seamless Mills:*** AMBRIDGE, PENNA.

where a man can buy a lease and not worry about title to the property. There are no unheard of claimants to show up when the oil starts paying dividends, nor are there any shyster title jumpers to introduce expensive legal talent. Both of these pests have caused no end of trouble in other localities and they are still unhung. To hold a lease in the Osage, all one has to do is to abide by the rules laid down by the government and the property is his from then on.

Regulations are not severe but the guardians of the Indian rights are strict and they are as competent and keen a group of oil men as can be found in any major producing company.

The separation of oil from gas leases introduces some complications but they are the kind that any Texas Panhandle operator would enjoy. If the owner of an oil lease drills in a purely gas well where he had been hoping for a new oil pool, he does not have to worry about how to get his money back. He merely reports to the Agency and they offer the well and lease to the owner of the gas rights on that property. If the gas man takes it over, he buys out the oil man, who moves to another piece and tries again. An idea of that kind introduced into the Panhandle would start a boom that would make martial law a permanent necessity.

For the recent auction of Osage lands, as in the two previous ones, the first year drilling obligation was waived. This was another inducement offered to stimulate buying. One might almost call it a concession to ease the sting of the high royalties a successful lease has to bear. If a lease averages over 100 barrels per well the Indian wards of the government receive a one-fifth royalty, though when the average is below 100 barrels they are content with only one-sixth. The sum they have received to date as a result of these oil royalties alone has reached the staggering total of $105,644,000.

At the present time there are 9914 producing wells in the Osage with a daily average per well of a little better than five barrels. There are 450 gas wells, though all are not on production, from which a total royalty of $1,173,920 has been received. Adding the two above figures to the $110,083,000 paid into the coffers of the Osage nation through the sale of leases, makes a grand total of nearly $217,000,000. Each of the 2229 head rights of the tribe has received then a sum slightly less than $100,000 from the oil and gas development of Osage county.

Of dry holes there have been a plenty, 5803 to be exact, though this figure also represents the wells that have been plugged and abandoned as no longer being commercial producers. The accompanying list gives the most important dry wildcats in the west half of the Osage.

It will be noted from the total depths shown that the wells constitute real test of areas in which they appear. That is, they have in most cases gone through all the possible pay horizons and penetrated the Mississippi lime, the "Wilcox," or the Silicious lime. Results in all cases have been negative as far as production is concerned.

Judging from the list, it certainly seems that there is a reasonable doubt that production will be found in quantity in the western half of the Osage. Yet the possibility of finding another productive lens is ever present and exploration work will probably be continued for years to come. Just now it is considered a highly speculative area and acreage west of R5E does not bring bids very readily.

There are several reasons besides the dry hole evidence that lead companies to the above conclusion. Where the eastern half of the county has structures of various sizes scattered generously about, the west half is decidedly barren by comparison. In addition, the change in geologic section as the beds thicken toward the Kay county line, not only necessitates deeper drilling, but brings in new formations that do not have a good productive history.

Most geologists are willing to concede the possibilities of the lower sands but their companies are not as willing to make further tests. Their reason seems to be based on the conclusion that the return is not worth the risk, so if new pools are found in the Osage they will probably be the result of the efforts of Independent operators.

Reclamation of Lubricants At Compressor Plant

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Oct. 31

THROUGH a "home-made" system of reclaiming crank-case oils, the Delaware Consolidated Oil Co., operating the Mid-Continent field's largest repressuring project, has cut its monthly lubricating oil bills in half. The system, designed by I. L. Dunn and J. O. Lewis, managers of the company has been in operation for several months and its use is now routine practice.

The equipment consists of a tank for treating the used oil with caustic soda solution, a "washer" and a fuller's earth filter. It is novel in several respects and is cheaply constructed and installed.

The principal treating tank has a capacity of 12 barrels and is shown in an accompanying photograph. Inside the tank a 2-inch pipe is welded into the top, is equipped with check valve on its bottom and extends down through the center of the tank to a point below the level of the caustic soda solution. A small air line which taps into a discharge line from the nearby compressor station runs inside the 2-inch pipe. The 2-inch line has small openings near the top of and inside the tank.

In operation, when the batch of oil to be treated is put into the tank, its weight forces the soda solution up inside the 2-inch pipe through the check-valve. A gas fire is built under the tank and the soda solution heated to around 200 F. Then compressed air is admitted through the small line inside the 2-inch, the latter standing filled with the hot solution to about the level of the oil riding on top of the solution in the bottom of the tank.

The air causes a percolating action. It lightens the column of solution inside the 2-inch, causing it to "perk" vigorously and escape through the holes in the top of the 2-inch.

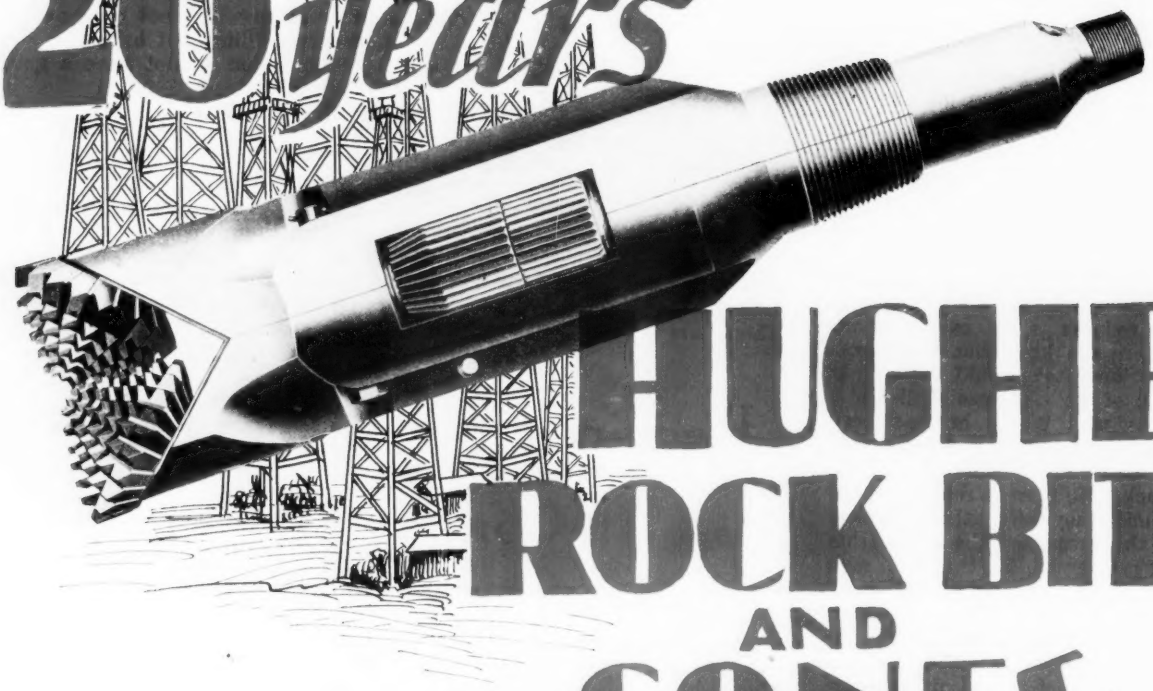
The solution thus falls on the top of the oil, settles down through it and falls again to the bottom of the tank. The pressure of the air in the top of the tank in that space not filled with oil will regularly overbalance the column inside the 2-inch, opening the check-valve and permitting more solution to rise inside the 2-inch as required.

This process is continued for three to four hours. The treating tank is fitted with several try-cocks, as shown in the picture, and from time to time oil is drawn from various levels to note the progress of the treatment. Depending upon the time of treatment and the rate of filtering, oil of any color and viscosity can be produced.

The method is considered far superior to that of simply heating the tank and letting the solution bubble up into the oil as it assures a thorough mixing of the solution with the oil and the right amount of agitation. The tank is fitted with an escape valve through which the air is popped off and has a pressure gauge.

At the bottom of the tank is a hand-plate for cleaning the sediment that accumulates when a batch of oil is treated. The soda solution is used over and over, being drained off before the oil is transferred from the

FOR 20 years



HUGHES ROCK BITS AND CONES

Sold by Supply Stores Everywhere

have been depended on to successfully drill hard formations throughout the Rotary fields of the World

HUGHES TOOL COMPANY

Service Plants:
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant:
HOUSTON,
TEXAS

Export Office:
Woolworth Bldg.
New York City

treating tank. The oil outlet from the tank is located high enough that no sediment comes off with it.

The usual method of reclaiming oil is to heat it to boiling point, allow it to settle and take the good oil off the top. Much of the oil is thrown away with the settlings. The method used by the Delaware Consolidated recovers about 95 per cent of the amount treated.

Oil after treating is transferred by air pressure from the tank to the fuller's earth filter, which also is a closed container. The rate of treating is regulated by the pressure applied to the top of the oil in the treating tank. Purification of the fuller's earth is accomplished quite simply and without removing it from the container. It is heated red-hot and a current of air forced into the hot earth. All carbon and other impurities are quickly burned out, and without resort to spreading on trays or otherwise handling the earth.

The cycle of handling lubricating oil through the plant and back to the purifier system is a simple one and one that saves much time. Reclaimed oil is transferred from the tank under the filter to storage from which a 2-inch pipe line leads through the compressor station. This line is above the engines. Drop lines come off this 2-inch, one drop supplying oil to two engines. Underneath the engines are pans for catching the oil; the oil is moved by gravity from these into a closed tank. When 12 barrels have accumulated in the latter air pressure is used to transfer the oil into the treating tank.

Prairie Abandons Cement Tanks For Storing Sulfur Crude

TULSA

EXPERIMENTAL cement stock tanks, built by the Prairie Oil & Gas Co., in the Borger district of the Panhandle, have been abandoned as not being suitable for storage purposes. In combating the corrosive effects of the sulfur crude in the area, the company was able to uphold the contentions of the engineers in charge. But frost action, seepage, and weaknesses in roof construction made the tanks impractical.

All of the tanks were built in Hutchinson county, two in section 64, block 46, H&TC survey, and one in the SE of section 20, block Y, M&C survey. At the time of their construction about a year ago, the problem of tank corrosion had reached a point where every operator in the territory was seeking an answer.

Water was forcing the issue and tank failures were common, as companies resorted to steam treating the sulfur crude. Any new idea was welcome if it seemed to point toward a saving in the expenditures then being made for new tanks.

The Prairie made the first move and its cement working tanks were watched with considerable interest. Other companies had the same idea but had shied at the expense. However the experiment was worth the effort and the cost was lower than the original estimates. The following table gives the actual expenditures:

Equipment	
Cost of material, tools, etc., used in connection with constructing three tanks (all recoverable material to be used again)	$ 919.23
Labor used in constructing tower, for pouring cement, also in building forms, etc.	52.00
Total cost of equipment	$ 971.23
Construction	
Cost of material, etc., used in three tanks	$1493.79
Labor used in construction three tanks	1954.49
Trucking, teaming and tractor expense	591.25
Total cost of the three concrete tanks, less decks and tank connections	$4039.53
Average cost of each concrete tank	1346.51
Tank Decks	
Cost of material furnished by P. O. & G. for building three decks	$ 122.76
Labor furnished by P. O. & G. Co. for building three decks	72.00
Balance labor, etc., furnished by Johns Manville Co. (Gratis)	
Total cost of three decks for concrete tanks	$ 194.76
Average cost of concrete tank decks	97.38
Total cost of construction and decks	$4234.29
Average cost per tank of construction and decks	1411.43
Total cost of construction, decks, and equipment	$5205.52
Average cost of each tank, construction, deck & equip.	1735.17

No two of the tanks were made alike as far as the concrete mixture was concerned. In tank No. 1 the walls were, one part water, three parts graded sand, and three parts cement. The floor footing had six parts cement, and the floor itself was rock with a 1-inch topping composed of one part sand to three parts cement.

Tank No. 2 was the same as No. 1 except that quick-set was used in the walls. Luminite was substituted for cement in the walls of tank No. 3, and two inches of gravel took the place of the rock in the floor. Construction of all the tanks was the same with old sucker rods being used for re-enforcing irons and the wall and bottom thicknesses standardized.

The principal difficulties encountered were in the roof, which was not vapor proof, and the lack of tight connections at the outlet and bleeder. Unequal expansion which took place when the oil was steamed made tight connections almost an impossibility. The effort to remedy these faults proved more trouble than it was worth and the tanks are no longer being used.

Old Well Comes to Life As Water Gusher

LOS ANGELES, Oct. 31.—Evidently as a protest against the rapid strides being made by subdividers of the townlot part of the old Athens field, the Athens 8, originally drilled by Julian Petroleum Corp., blew-in recently to make about 7 million cubic feet of gas and 2000 barrels water per day.

The well was abandoned in 1926 after being drilled to nearly 4500 feet and plugged back to 4120 feet. Records show that no gas was encountered during operations and it is therefore supposed that the present gas is coming from a shallower depth probably around 3000 feet as it is at this depth that some gas pressure is encountered in the main Athens field.

Since the well was abandoned the surface has undergone a great change and houses have replaced derricks. As a result of the influx of mud, housewives have entered a protest and state that their houses and grounds will be ruined unless the well is capped. At the present the well is flowing freely with unabated pressure and there is no visible means of securing a shut-off as all surface equipment was removed when the well was abandoned.

Some operators have suggested that here is a chance for state authorities to gain a little practice in preventing the "unreasonable waste of gas." Here very little opposition would be offered, that is, opposition other than that presented by the well itself.

WASHINGTON—Gasoline exports from Curacao fell from the high figure of 828,300 barrels attained in May, to 812,300 barrels in June. Kerosene and lube oil exports decreased, while exports of gas and fuel oils increased considerably during June.

Gas and Air Lift in Oil Production

In 59 articles since the first of 1928 NATIONAL PETROLEUM NEWS has told of the use of air, gas and water in increasing oil recovery, application methods, and of restoring pressure to old pools.

Here they are for your file reference:

1929

Mid-Continent repressuring practice Oct. 9, p. 48-B

Repressuring in depleted oil zones Oct. 9, p. 48-P

Repressuring successful in Burbank Aug. 21, p. 37

Gas lift practice of 15 companies in Seminole June 26, p. 62; June 19, p. 57

Water drive in Bradford speeds as technique improves May 29, p. 50

Keeping accident out of air-gas lift plants May 22, p. 59

Safety rules for operators May 22, p. 62

Automatic water supply for gas lift May 1, p. 64

Alcohol keeps gas lift lines open March 13, p. 66

Repressuring results in Bradford Feb. 13, p. 62; Feb. 6, p.51

Better recovery, cheaper lifting sought Feb. 13, p. 35

Pulsing air-gas cuts repressuring hazards Jan. 30, p. 60

Sante Fe Springs gets repressuring plan Jan. 9, p. 40

Lease returns cost of repressure equipment quickly Jan. 2, p. 29

1928

Archer Co. output may be increased by repressuring Dec. 19, p. 34

Back pressure increases yields Dec. 12, p. 43

Questions economic success of gas lift Dec. 12, p. 60

Unit repressuring effects savings Dec. 5, p. 65

Repressuring in Burmah fields Dec. 5, p. 62

Gas-oil ratio of 5000 ft. for Misener sand Nov. 7, p. 41

Restoring pressure flows wells regularly Nov. 7, p. 27

Back pressuring advised for Santa Fe Springs Nov. 7, p. 42

Santa Fe Springs drafts repressuring plan Oct. 31, p. 36

Repressuring slows down for winter Oct. 24, p. 44

Better use of gas in oil recovery Oct. 24, p. 24

Intermittent injection of gas in gas lift installations Oct. 17, p. 44

Economic effect of gas lift in natural gasoline industry Oct. 17, p. 130

Gas lift raises new problems in depletion Oct. 17, p. 159

Flowing wells against pressure sands in Seminole Oct. 3, p. 56

Early repressuring in Cook pool Oct. 3, p. 26

Repressuring in Lima field Sept. 12, p. 51

Application of gas in plant control Sept. 5, p. 79

Avoiding extra cost in pressure rejuvenation Aug. 15, p. 38

Pressure rejuvenation in Powell-Stove Aug. 1, p. 25

Effect of operating methods on oil recoverable July 25, p. 50

Salt Creek has big gas drive July 11, p. 29

Water flooding not successful in Kane, Pa. July 4, p. 50

Origin and development of water flooding May 30, p. 59

Intermittent use of gas lift economical May 30, p. 69

Recovery of natural gasoline at gas lift plants May 23, p. 98

Gas lift in relation to natural gasoline May 23, p. 97

Results of pressure recovery in Bradford May 23, p. 25

Eastern field operators discuss repressuring May 23, p. 23

Repressuring oil sands May 16, p. 85

Fluid displacement pump used with gas lift Apr. 23, p. 100

Repressuring causes gasoline plants to close Apr. 11, p. 51

Effect of modern production methods on natural gasoline Apr. 4, p. 17

Gas conservation in oil production Mar. 21, p. 27

Repressuring against 1500 pounds at Seal Beach Feb. 29, p. 23

Effect of repressuring during flush stage Feb. 29, p. 53

Repressuring during flush life of pools Feb. 29, p. 23

Air lift brings new hazards Feb. 22, p. 26

No general repressuring in Seminole yet Feb. 15, p. 85

Air lift results in Bristow Feb. 8, p. 52

Gas lift justified by speed of recovery Feb. 8, p. 47

Residue gas generates current for pumping wells Feb. 1, p. 75

Repressuring with volume controllers Jan 18, p. 87

Back copies of any of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page.

Libraries in the larger cities generally keep back files of NATIONAL PETROLEUM NEWS complete.

National Petroleum News

Main Office: 1213 West Third St.

Cleveland, Ohio

Valley Center Salt Water Handled by Pipe Line

TULSA—The system of handling salt water produced with oil in the Valley Center field, Sedgwick county, Kans., is described in the October number of "The Cemmenter," published by the Halliburton Oil Well Cementing Co. The article was written by George T. Hoisington, Kansas district superintendent for the company.

"One of the very interesting features of this territory is the underground river that flows beneath the city of Wichita at the rate of eight feet every 24 hours through a gravel bed about 20 to 40 feet below the surface. The city water supply is obtained from the gravel bed.

"As the path of this underground river comes from the direction of the Valley Center field, six miles from the city, and since the top soil is a sandy loam which has excellent subsoil drainage, concern was felt about possible pollution of this water supply by oil and salt water from the new oil field. It was feared that pollution of Little river would damage Riverside park.

"As a means of preventing pollution the majority of Valley Center operators immediately adopted the practice of cementing a string of casing below the last water above the pay formation.

About the first of this year the Bu-Vi-Bar Petroleum Corp., principal producer in this pool, started laying a four-inch salt water disposal line from the field to the north part of Wichita, where they connected into a storm sewer passing through the city and discharging into the Arkansas river.

"The Bu-Vi-Bar not only handle their own salt water with this line but sell the service to other operators at a nominal fee. Their system is very similar to a pipe line company. All water picked up by their gathering stations is gauged and run tickets are made. Operators are charged three cents per barrel for the service.

"They have a station on each of their leases equipped with a six-horsepower Fairbanks-Morse engine and a three by six duplex gear driven pump, which picks the water up out of a ten by twelve by six concrete tank and discharges to a central plant which in turn discharges into the storm sewer line. Water is run into the concrete tank by gravity from the oil tanks.

"The efficiency of this disposal system is proven by the fact that, at this date there is no pollution of Little river, nor contamination of the city water according to daily tests made by the city and the Wichita Water Co."

Accurate Method Necessary to Avoid Error in Tank Car Temperature

By H. T. Bennett*

(Read before Western Petroleum Refiners Association, Tulsa, Oct. 28-29)

THE temperature of the oil immediately after loading into a tank car is usually uniform throughout the car, consequently no difficulty is experienced in obtaining the average temperature. On standing, however, considerable difference may be found between the temperature of the oil in the top and bottom of the car. In summer this difference may be 10 to 30 degrees F.

When such differences occur errors are frequently made in obtaining the average temperature. In such cases the average temperature may be obtained by ascertaining the temperature of the oil in the upper, middle and lower portions of the car. (Upper, middle and lower as defined in A. S. T. M. method of sampling.) The average temperature is then calculated by the following formula:

$$\text{Average temperature}\dagger = \frac{\text{upper} + 8 \times \text{middle} + \text{lower}}{10}$$

This method, however, is not used by all purchasers of petroleum products. Some jobbers attempt to determine the average temperature by one of the following methods:

1. By simply lowering and raising a thermometer through the oil and then noting the temperature.

2. By noting the top, middle and bottom temperatures and then adding the three readings and dividing the sum by three.

The magnitude of the error in both methods is dependent upon the difference between the top and bottom temperatures and the type of thermometer used. After a car has been standing a number of hours exposed to the sun, both methods are inaccurate. As 1 F. difference in temperature means six gallons, on a 10,000 gallon car a difference of 24 gallons may be obtained in some cases by simply using a different method of calculating, even when the temperature is correctly observed at different points in the car.

To obtain an accurate temperature of the oil at any predetermined place in a tank car is rather difficult with the apparatus now being used by the oil trade. Tank thermometers which have a metal case with closed bottom for keeping the bulb surrounded with oil until temperature is noted are usually used. Most of the thermometers of this type are graduated in 2 degree F. divisions.

These thermometers are not very sensitive and it requires at least five minutes for some of them to record the actual temperature of the oil in which they are immersed, especially after passing through an upper layer of hot oil.

When determining the temperature of bright stock having a viscosity of 200 at 210 F. Saybolt Universal, large errors may occur due to thermometer lag. As the upper portion of the oil is hottest the tank thermometer cup is filled with this hot oil when passing through it and bright stock is so viscous that it requires a very long time to be displaced by the cooler oil.

The results of a few experiments are recorded below in Table No. 1.

The tests below simply show the need for an accurate method to determine the actual temperature of oil in tank cars.

Other tests show it requires at least five minutes for many tank thermometers to reach the temperature of the oil in which they are immersed, especially after passing through hot oil. Tank thermometers graduated in one degree divisions are also desirable.

In order to obtain further data regarding methods of determining average temperature two ten-thousand gallon tank cars having a diameter of eight feet were filled with water and then let stand in the sun. The temperature of the water at the top, middle and bottom of the car was then noted after which the water was thoroughly agitated with a mechanical stirrer. Water was used instead of gasoline to eliminate any change in temperature due to evaporation and

*Mid-Continent Petroleum Corp.

†As the diameter of most tank cars is approximately eight feet, the above formula should serve for commercial purposes.

Table No. 1—Temperature with Tank Thermometer in Oil

	2 Minutes		15 Minutes	
	With Regular	Without	With Regular	Without
Section of Car	Cup	Cup*	Cup	Cup*
6 inches below surface	118	112	114	114
Middle	107	95	94	89
6 inches from bottom	98	88	84	83
Caculated average	107.2	96	95	90.9

*Thermometer quickly pulled through oil and temperature immediately noted.

Table No. 2—Tests on Experiment No. 1

Temperatures	6 Inches Below Surface	Middle	6 Inches From Bottom	Calculated Average
Before agitating, Tank thermometer No. 1..	105	95	91	95.6
Before agitating, Tank thermometer No. 2..	106	96	91	96.5
Before agitating, thermometer in bottle.....	102	89	87	90.1
Before agitating ½ hour later, Tank thermometer No. 1.....	105	93	91	94.0
Before agitating ½ hour later, Tank thermometer No. 2.....	105	94	91	94.8
Before agitating ½ hour later, thermometer in bottle	102	90	87	90.9
After agitating, Tank thermometer No. 1....	92	92	92	92
After agitating, Tank thermometer No. 2....	91.5	91.5	91.5	91.5
After agitating, thermometer in bottle.....	91	91	91	91

Tests on Experiment No. 2

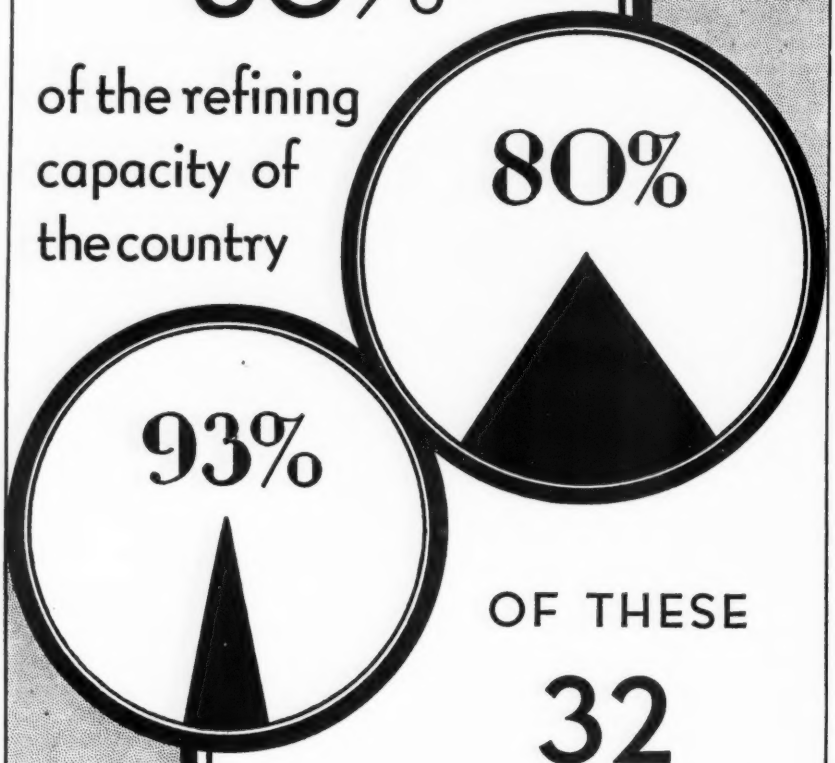
Temperatures	6 Inches Below Surface	Middle	6 Inches From Bottom	Calculated Average
Before agitating, Tank thermometer.....	100	92	89	92.5
Before agitating, Thermometer in qt. bottle	95	89	86	89.3
Before agitating, Bureau of Mines Method..	98	89.5	85	89.9
After agitating, Tank Thermometer.....	90	90	90	90
After agitating, Thermometer in qt. bottle	90	90	90	90
After agitating, Bureau of Mines Method....	90	90	90	90

32

Companies (including their subsidiaries) operate

80%

of the refining capacity of the country



OF THESE

32

93%—all but two of them—are using OCECO equipment to conserve and safeguard their products.

This, we hold, is significant.

THE OIL CONSERVATION ENGINEERING COMPANY

877 Addison Road Cleveland, Ohio

ENGINEERING AND SALES SERVICE

25 Broadway, N. Y. Neilan, Schumacher & Co., Los Angeles, Cal.
Box 552, Beaumont, Texas Tulsa Trust Bldg., Tulsa, Okla.

also because of the higher specific heat of water as compared to oil.

Experiment I

Two tank thermometers with cups were used, allowing five minutes for thermometers to come to constant temperature. Also a quart bottle fitted with string, cork holding thermometer and sinker was lowered to required depth, the cork jerked out of bottle leaving thermometer bulb in bottle. As soon as bottle was filled it was withdrawn and the temperature recorded. Results are shown in Table No. 2.

Experiment II

The temperature of the water in the 10,000-gallon tank car was determined at different levels with tank thermometer, thermometer fitted in quart bottle which could be opened at point desired, and with equipment devised by the Bureau of Mines which consisted of a small wooden box holding about half a pint. To the bottom of the box was attached a piece of lead which served as a sinker. A thermometer was inserted through the top. A wooden plug was inserted in another hole in the top which could be withdrawn by means of a string. When apparatus was lowered to required depth, the plug was withdrawn and apparatus allowed to fill with liquid. It was then withdrawn and temperature noted. Results are shown in Table No. 3.

The experiments show that correct temperatures cannot be obtained with tank thermometer. A device similar to the Bureau of Mines equipment but somewhat larger, made of Bakelite should give very satisfactory results.

The correct temperatures could also probably be obtained with a potentiometer, but such equipment is too expensive and possibly too delicate for the average user.

All the experiments show need for an accurate method of ascertaining the average temperature of oil in tank cars. Such method should be simple and should not require expensive equipment. The accurate determination of the temperature of the oil at the middle of the tank car with a small box thief made of material of low heat conductivity and containing a thermometer appears to offer the best solution of the problem.

The adoption of a standard method by the oil industry would eliminate, to a great extent, the numerous outage claims made by the oil jobbers. It would also result in a saving to the refiner as the jobber today is justified in using the present cup thermometer which usually gives too high a temperature and consequently permits him to make a greater gallonage deduction.

NEW YORK—A district office at Seattle, Wash. has been opened by Combustion Engineering Corp., New York. George M. Bechtel is branch manager at that point.

Safe—Superior—
STEEL!

THAT'S a formula that spells success and satisfaction in line pipe. On it depends the reputation of our pioneer product, ODEE Pipe for gas lines. Its pressure test speaks for safety. Its special steel content saves weight, there fore time and labor in handling, ar insures longer life with greatest re tance to corrosion.

You realize the saving in O Pipe when you see how the d lengths cut your field welding in You know what our service means you see your pipe arrive on the j time or ahead of it, thanks to our t system that follows every car.

And you realize the super-val it when you see a line of ODEE

GREENSPC

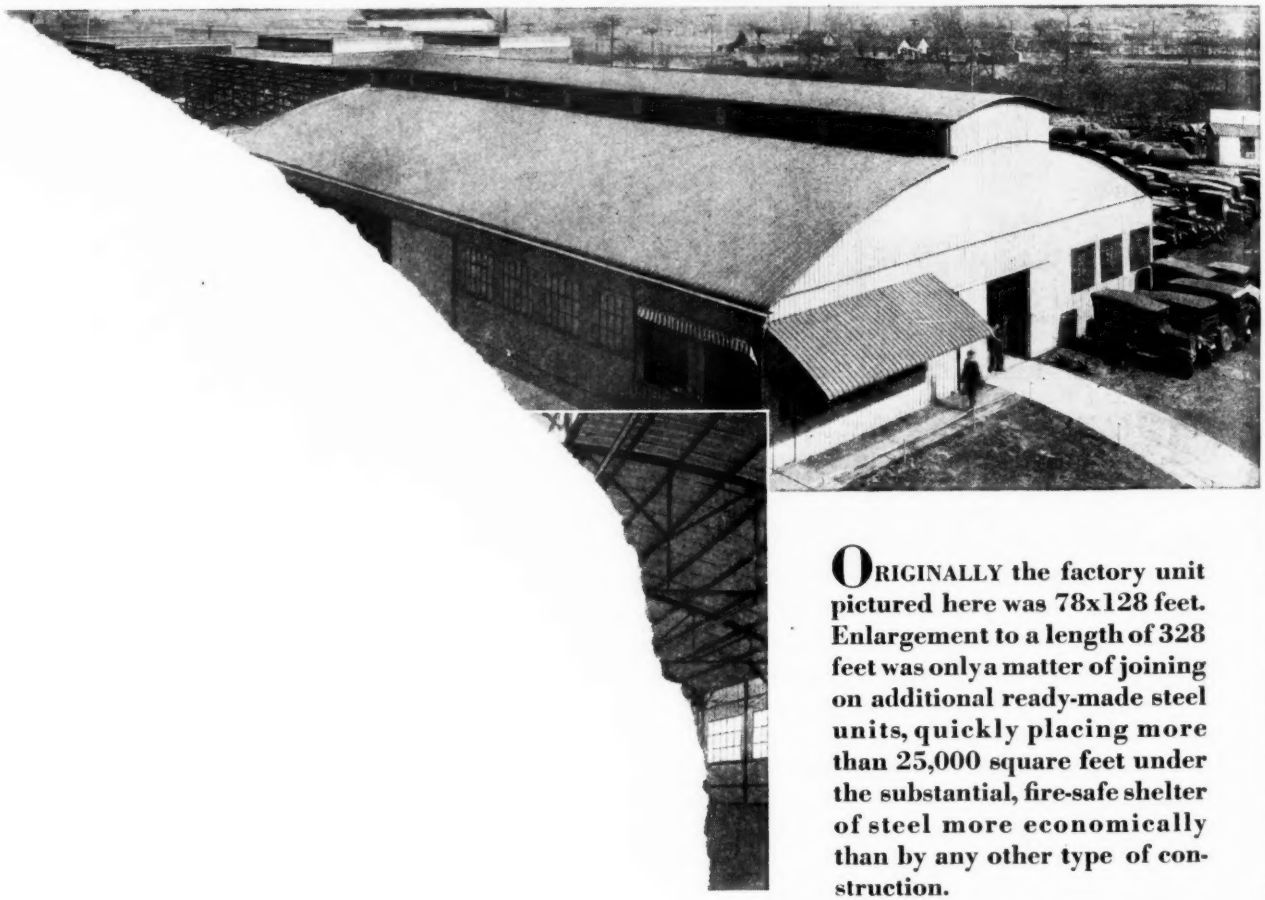
PIPE FO

BUTLER

READY-MADE

STEEL BUILDINGS

Come Complete - Ready to Erect Easily - Quickly



ORIGINALLY the factory unit pictured here was 78x128 feet. Enlargement to a length of 328 feet was only a matter of joining on additional ready-made steel units, quickly placing more than 25,000 square feet under the substantial, fire-safe shelter of steel more economically than by any other type of construction.

ors or roof monitor, Butler Steel Build-
and quickly. All members, sections and parts are interchangeable. Throughout, he maximum strength per pound of steel

ercial undertakings Butler Ready-Made blems to the satisfaction of the most et showing many of these installations. nformation to aid in making a selection

TURING COMPANY

941 Sixth Ave. S. E.
Minneapolis, Minn.

Steam Distillation Suggested For Charcoal Tests

By R. J. Jones*

(Presented before California Natural Gasoline Association, Oct. 10)

IN CONSIDERING the adoption of steam distillation to take the place of the generally used glycerine method, considerable explaining must be done to show justification for such a move. In the first place, before discussing the relative merits of one distillation over the other, it must be openly admitted that the most satisfactory method of determining the gasoline content of natural gas is by means of the fundamental analysis such as is afforded by the Podbielniak Apparatus.

However the time and expense involved in the obtaining of analysis results is considerably in excess of that expended in determining results by charcoal. It is also admitted that the results obtained by charcoal are more or less inaccurate in comparison with an analysis, but at least from the standpoint of prorating the plant production they do give the information required.

Even in absorption plant operation their use has been and will continue to be, to the small operator at least, the most convenient means of indicating absorption plant efficiency. Especially will this last item be true if the yields by charcoal are correlated against the yields by analysis. Granting that there is and will be a need for a charcoal test, there should be an equal approbation for any improvement of the equipment or method of operating.

The charcoal test was first used in the California oil fields some ten years ago and was introduced by Burrell and the Bureau of Mines as giving promise of being more desirable than the oil absorber test in general use at that time. The acceptance of charcoal as a test medium was slow purely because nothing was known regarding the manipulation of such a test or the apparatus required. Men engaged in such work tell us that the handling of the test was very crude. Items that now seem commonplace to us had yet to be worked out.

Notable among these was the use of a short, rather large diameter tube in preference to the 30-inch length of ¾-inch pipe as now employed. It was also true that the value of a thermometer placed in the charcoal to indicate the completion of the saturation of the charcoal was not discovered until several years later. Therefore it may be pointed out that the acceptance of glycerine for use in the distillation was not based on exhaustive tests indicating its superiority over steam, but merely because steam was tried out at that time and discarded due to the fact that the proper method of conducting a steam distillation was not discovered.

Consequently glycerine was adopted and has been used ever since except in some cases where mercury has been employed to obtain a relatively pure sample of natural gasoline free from the contamination of glycerine and its by-products. Therefore in contemplating the substitution of steam for glycerine in the distillation of hydrocarbons from charcoal the move should be considered merely the culmination of constant endeavors to effectively use steam for this purpose and not as an attempt to discard one method for a totally different one of no greater desirability.

As an initial statement in the comparison of these two methods it is believed that the steam distillation has all of the advantages claimed by the glycerine charcoal test over the old oil absorber methods and in addition has some advantages that can only be credited to the charcoal test when distilled by steam. Of these advantages probably the most notable is the possibility of accurately correlating tests of any mixture of hydrocarbons possible to test by charcoal, against an analysis of the same mixture. Of this more will be said shortly.

One of the most familiar failings of the glycerine distillation is the formation of glycerine by-products which merge with the gasoline in the condensate receiver and consequently indicate a false yield. Actually in some distillations of certain gas mixtures this quantity of glycerine by-products has been frozen out and found to exceed 50 per cent of the measurable volume.

In comparison the steam distillation produces nothing but gasoline and water, clearly separated in the condensate receiver. Also the production of glycerine by-products is apt to lead to some discomfort to the men in the laboratory when the apparatus is taken apart, especially as acrolin is distinctly an irritant to the eyes. Steam distillation gives no such trouble.

In considering the comparative cost of the two methods it is true the initial outlay for the laboratory equipment probably is somewhat higher for the steam than the glycerine. However this discrepancy should soon be compensated for when the difference in operating costs is added. The cost of electrical energy is greatly overbalanced by the summation of the costs of glycerine and cleaning and replacing the charcoal after being contaminated by the glycerine.

The first glycerine distillation decidedly lowers the absorption qualities of the charcoal and considerable treating is necessary to effectively remove the contamination. In fact some companies replace the charcoal after one distillation. Whereas in the steam distillation indications point to the continuous use of the charcoal without further treatment, other than screening and drying, until shrinkage by crumbling necessitates the addition of new stock.

As before stated, probably the greatest advantage, as indicated by testing to date, lies in the fact that results obtained by steam distillation are more consistent, more easily correlated to the analyses results, and more readily adapted to absorption plant operation. The reasons for production of these more favorable results can be found in a description of the part played by glycerine and steam in their respective distillations. However before starting this description perhaps a statement should be made to clearly interpret the terms used in this paper.

The term "light undesirable material" shall be interpreted as including propane and lighter; the term "light desirable material" includes isobutane, butane and a portion of the pentane; and the term "heavier ends" includes the remainder of the pentane and all of the heavier hydrocarbons present in the gasoline.

First in considering the glycerine method, everyone is familiar with the actual apparatus and handling of same. Briefly, some 280 cubic centimeters of saturated charcoal are dumped into a retort of approxi-

*Union Oil Co.

One of a series of paid advertisements

Stock Market Losses and Spilled Milk

STOCK market losses are like spilled milk — they must be wiped up and forgotten.

The best way to forget is to constructively occupy one's mind with something else.

The stock market and easy profits were rapidly making us financially careless and loose in our living and viewpoint.

Sound values have never changed. The oil stocks that we know are backed by attentive management and wise policy, are still "Good buys."

But—buying and speculating are two different operations—and speculating is always a dangerous pastime for the amateur. It is even risky for the professional as the recent financial mortality will testify.

Let's get back to business—big, real profits are to be made by those who improve producing, refining or marketing methods in the Oil Industry. Never in all history have sound ideas been so urgently needed and so sure of satisfying rewards.

In the Oil Industry, we have plenty of alert brains and sincere, capable leadership. With the fever of speculation out of our eyes, we will be able to distinguish between that and "jazz."

Great and small companies have been literally disorganized by the divided attention of employees between the stock ticker and the daily job.

No need to be pessimistic, disheartened or nervous—we must wipe up the spilled milk and constructively occupy our minds with the pressing, unsolved business problems, answers to which will pay big returns.

No legitimate expansion program will suffer as the result of the stock market debacle.

Many illy conceived, economically unsound plans are already sunk or will have to be abandoned.

This is as it should be and all to the good.

Any thinking man can easily name 20 oil stocks that are good investments at present prices and will be infinitely better investments as the Oil Industry deserts the office of the stock broker and gets back on the job.

If you have legitimate consolidation or expansion programs, reorganization plans or marketing ideas, do not abandon them—now is the time for the thinker and the worker to move to higher ground.

Success for the oil man is to constructively look ahead—the speculative wasted past is behind and dead —*forget the spilled milk.*

L. V. NICHOLAS

L. V. NICHOLAS — *Oil Finance—Organization—Investment* **624 South Michigan Avenue—Chicago, Illinois**

Correspondence Solicited

mately 1000 cubic centimeters. To this charcoal approximately 125 cubic centimeters of glycerine are added and the mixture is heated by a gas flame applied to the bottom of the retort.

Due to the fact that glycerine foaming has caused some trouble it is necessary to have the retort of such size that there exists a vapor space of some 600 cubic centimeters. Now, if the distillation is run to the specifications of the California Natural Gasoline Association, the apparatus is shut in and the pressure is allowed to build up to 30 pounds before opening to the regulator.

This means there is a mixture of air and high vapor pressure hydrocarbons present in the retort and condenser while the temperature of the mixture is being raised by the application of external heat. Consequently as the lightest desirable vapors leave the charcoal they enter a mixture of vapors in which their percentage composition is very low and naturally the partial pressures exerted by these desirable hydrocarbons in this mixture are of small magnitude. This means that condensation of these vapors in the condenser does not occur but instead they are lost through the vent. Whereas in the steam distillation apparatus the retort is only of sufficient size to hold the charcoal charge and there does not exist a relatively large quantity of foreign material to dilute the mixture.

Instead the construction of the retort allows the placing of the charcoal in such a manner that the lower layer of the charcoal is saturated with the lightest hydrocarbons and the heaviest hydrocarbons are in the charcoal situated at the top of the retort. This is true because the retort is approximately 1½ inches inside diameter by 10 inches long and stands in a vertical position.

As the steam evenly penetrates each pore of the charge the lighter ends are blended with successive heavier vapors and due to its own partial pressure in the retort, allows a high concentration of light blended condensable vapors to be released into the condenser.

It is at this location in the apparatus that the use of steam produces such radically different conditions than those that exist in the glycerine distillation. For, as the mixture of steam and vapor is cooled to 33 F. the steam condenses to water and the concentration of the vapors becomes such that the partial pressures existing condense practically all of the material present. In fact, in the case of charcoal tubes saturated with plant discharge gas it has been noticed that a portion of the material collected in the condensate receiver is so light as to be unstable at 33 F. and 30 pounds and in short evaporates from the solution to such an extent that ice crystals are formed on the outside of the glass.

In contrast to this condition the vapors flowing through the condenser during the forepart of a glycerine distillation are totally composed of air, non-condensable hydrocarbons and small portions of desirable vapors. Consequently a large portion of the pentane, butane and iso-butane are lost through the vent because they are not concentrated in the condenser to permit the production of a zone in which their partial pressures are relatively high.

Therefore it is evident that a distillation consistently condensing all of the desirable fractions, as the steam distillation does, may be correlated very nicely with the analysis results. Besides this evident discrepancy during the forepart of the distillation the glycerine distillation also merges its by-products with the condensed gasoline.

This item for a charcoal tube saturated with discharge gas from an absorption plant does not give a materially erroneous result, especially as the yield obtained is still so low that its comparison with an analysis is of little or no value. However it has been noticed that in distillations of very rich gas the yields by glycerine may be just as high as those obtained by steam. This is probably true because the percentage of light materials in the charcoal is small and their loss is more than offset by the addition of the glycerine by-products to the gasoline.

In further explaining the present steam distillation it may be stated that the sole reason steam is now successfully used for this purpose lies entirely in the correctly controlled application of external heat. Earlier attempts consisted either in depending solely upon the use of wet or superheated steam or else by the use of gas fired retorts in conjunction with steam. Wet steam is successful during the forepart of the distillation in vaporizing the light material but fails in the latter part because of its inability to raise the temperature of the charcoal high enough to completely vaporize the heavier material.

It has been conclusively proven that wet steam, when introduced into a cold saturated batch of charcoal, will effectively supply sufficient heat to vaporize the lighter materials and will also, due to its own partial pressure, lower the partial pressures of the desirable vapors so that the evolution of these condensable vapors is very rapid following the period of the distillation during which practically all the propane and lighter hydrocarbons of high vapor pressures have been vented. Therefore by correctly applying external heat to supplement the heat furnished by the wet steam it is quite possible to complete the distillation.

This type of heat application results in a distillation characterized by a slow moderate heating in the forepart followed by a gradual temperature rise during the remainder of the time resulting in a final temperature of approximately 900 F. in the charcoal. Superheated steam on the other hand, is successful in providing high temperatures to drive out the heavier ends but fails because its temperature is too high to be used in the distillation of the light desirable material.

In explanation of this last statement it may be said that too rapid heating of the charcoal results in a lowering of the volume of condensed gasoline. This effect is undoubtedly produced by the fact that in a rapid heating all grades of hydrocarbons are more or less simultaneously vaporized, and the resulting composition and velocity of the vapors passing through the condenser is such that the light desirable fractions are not condensed but instead are lost through the vent.

Also, an additive effect of this too rapid heating in lowering the condensed volume, is found in the mechanical carry-off of condensed gasoline through the vent line due to the increased velocity. Therefore the rapid heating of a retort can not be allowed if consistent yields are to be obtained.

Considering the effects of superheated steam it can be seen that this medium cannot play a part in such a distillation unless it is used in conjunction with wet steam. That is, it would be possible to conduct a distillation more or less successfully, by first applying wet steam and then changing to superheated steam at some determined retort temperature. However this method presents operative difficulties and has never been seriously developed.

The application of this additional heat has been attempted by means of gas fired retorts but this method met with little or no success due to the serious obstacles presented in uniformly distributing the heat throughout the charcoal. Therefore the present apparatus utilizes electrical heating elements, which totally enclose the retort and enables the operator to apply to an even distribution of heat as needed throughout the distillation.

In closing this paper the statement should be made that it is given with the sole purpose of introducing the subject matter enclosed. No results of comparative tests are given and no statements concerning same are to be given at this time. It is the intention of the association to have a second paper presented in a short time in which will be given all data deemed necessary to support present indications. Also at that time slides will be presented showing the construction of the apparatus and a description will be given of its use.

Cost Accounting for Refineries With Skimming and Cracking Plants

By C. E. Votrain*

(Read before Western Petroleum Refiners Association, Tulsa, Oct. 28-29)

THE following "Classification of Accounts" for skimming and cracking refineries is designed to segregate operating costs by departments and in sufficient detail to reflect a true picture of actual operations. Statements prepared therefrom, while reflecting actual operating conditions, will not be in so much detail as to make them hard to interpret.

Unusual operating conditions are made to stand out in separate accounts or by a comparison of monthly charges to the various accounts. A separate detailed analysis of any account disclosing an unusual condition can be made to determine the cause.

"Instructions" following "Classification of Accounts" gives a brief explanation of the nature of charges to each account where the account name is not self-explanatory.

The "Skeleton Form" presented for computing "Cost of Producing Gasoline" followed by a brief explanation of its use, provides for the inclusion of refinery costs of every nature. Regardless of the method used in computing cost of gasoline it is essential to include all refinery costs if anything approximating actual cost of production is ascertained. Gasoline and other refined products may be offered for sale at what appears to be a reasonable profit based on incomplete cost figures when in reality the selling price includes little or no profit and in some instances will be below actual cost of production.

*Barnsdall Refineries, Inc.

COST OF PRODUCING GASOLINE FROM SKIMMING AND CRACKING OPERATIONS, MONTH OF ——— ———

RAW PRODUCT COST

Barrels		Unit Value		Amount	
XX	Crude Oil	XX	.....	XX	.....
.....	Pipeage on Crude Oil	XX	.....	XX	XX
	MANUFACTURING COSTS				
.....	Skimming Plant Costs	.....	.....	XX	.....
.....	Cracking Plant Costs	.....	.....	XX	.....
.....	Office and General Dept. Costs	.....	XX	.....	.....
.....	Less: Depreciation of Obsolete Equipt.	.....	XX	XX	XX
	Total Crude Oil and Manufacturing Cost	.....	.....	.....	XX
	Deduct: Realizable Value of By-Products				
Gallons					
XX	Kerosene (Billing price)	XX	XX	.....	.....
XX	Gas Oil (Billing price)	XX	XX	.....	.....
XX	Fuel Oil (Billing price)	XX	XX	.....	.....
.....	Fuel Gases	XX	XX	XX	.....
XX					
	Less: Pro-rata Marketing Expenses				
	Shipping	XX	XX	.....	.....
	Selling	XX	XX	.....	.....
	Administration	XX	XX	XX	.....
	Net realization from By-Products	.....	.....	.....	XX
	Net cost of gasoline from crude oil	.....	.....	.....	XX
Add:	Natural Gasoline used in Blending	.....	.....	XX	.....
Freight on	Natural Gasoline	.....	.....	XX	XX
	Cost of Gasoline Produced	.....	.....	.....	XX

Summary

Gallons		Per Barrel	Per Gallon
XX	Net Cost of Gasoline from Crude Oil	XX	XX
XX	Cost of Natural Gasoline for Blending	XX	XX
XX	Gasoline Production Costs	XX	XX
	Add: Pro-rata Shipping Expense	XX	XX
	Cost of Gasoline Leaving Refinery	XX	XX
XX	Depreciation on Obsolete Equipment	XX	XX

CLASSIFICATION OF ACCOUNTS FOR SKIMMING AND CRACKING REFINERIES

Department Divisions

10—OPERATING DEPARTMENTS
- 11—Crude Oil Stilling—Shell Stills
- 12—Crude Oil Stilling—Pipe Stills
- 13—Cracking Plant Stilling
- 14—Gasoline Vapor Treating
- 15—Re-run Stilling
- 16—Light Oil Agitators (Batch)
- 17—Continuous Treaters
- 18—Gas Plant—Still Gases
- 19—Tank Yard—Skimming Plant
- 20—Tank Yard—Cracking Plant

30—UTILITY DEPARTMENTS (For re-distribution)
- 31—Water Supply
- 32—Steam Plant
- 33—Electric Supply
- 34—Compressed Air
- 35—Main Pump House
- 36—Laboratory
- 37—Trucks

40—GENERAL DEPARTMENTS
- 41—Refinery Office
- 42—Plant General
- 43—Loading & Shipping
- 44—Fire Protection
- 45—Material Warehouse Overhead
- 46—Machine Shop and Mechanical Overhead
- 47—Material Reclamation

CLASSIFICATION OF ACCOUNTS FOR SKIMMING AND CRACKING REFINERIES

Department Subdivisions and Accounts

(A) LABOR
- 1—Operating Labor
- 2—Cleaning Expense (labor & material)
- 3—Unclassified Labor
- 4—Clerical Expense

(B) SUPERVISION
- 1—Direct Supervision (salary & expense)
- 2—Indirect Supervision (salary & expense)

(C) REPAIRS & MAINTENANCE
- 1—Ordinary repairs and maintenance (labor and material)
- 2—Unusual repairs and replacements (labor and material)
- 3—Changing equipment and dismantling

(D) MATERIAL SUPPLIES
- 1—Miscellaneous Operating Supplies

The more Dubbs Cracked Gasoline in the blend—the less for chemical compounds you spend

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

2—Stationery and Printed Forms
3—Fuel
4—Chemicals (separate account for each)
9—Tools (other accounts as needed)

(E) UTILITY DISTRIBUTION

1—Water
2—Steam
3—Electricity
4—Air
5—Main Pump House
6—Laboratory
7—Trucking

(F) SUNDRY CHARGES

1—Insurance — Workmen's Compensation
2—Insurance—Fire, Tornado, Explosion, etc.
3—Tax—Ad Valorem
4—Royalties (separate accounts if needed)
5—Depreciation of Equipment in Use
6—Depreciation of Obsolete Equipment (Plant General Only)
7—Traveling
8—Telephone and Telegraph
9—Experimental Expense
10—Miscellaneous

Instructions Pertaining to Classification of Accounts for Skimming and Cracking Refineries

For account classification purposes skimming and cracking refineries are divided into department divisions under three headings as follows:

OPERATING DEPARTMENTS
UTILITY DEPARTMENTS (For redistribution)
GENERAL DEPARTMENTS

Operating Departments

Operating departments for accounting purposes will have to conform to the refinery operations. The attached classification of accounts suggests operating departments that can be adapted to any refinery by adding additional departments or consolidating departments. The suggested operating departments, per classification of accounts, provides for re-run stilling, treating and gas recovery departments to handle products from both crude stills and cracking stills. A separation is made for tank yard expense which may have to be consolidated into one department depending upon the operating conditions of the refinery. If it is desired to obtain costs for skimming operations separate from cracking operations, the expense of operating departments handling products for both can be divided on the basis of the products handled for each division.

Utility Departments

Utility departments are the departments of the refinery as a whole that serve the operating and general departments and the expense charged to each of the utility departments is distributed on the basis of the service rendered each of the other departments. The suggested utility departments, per classification of accounts, can be revised to conform to the operating conditions of the refinery.

General Departments

Under the heading of general departments has been included departments that are not classified as direct operating departments or utility departments. The general departments, per classification of accounts, can be adapted to the working conditions of the refinery for which the classification of accounts is used.

Total monthly charges to material warehouse department is to be distributed on a percentage or some other basis to materials requisitioned from the warehouse during the month.

Machine shop and mechanical department expense is to be distributed on a percentage or some other basis to job order labor of machine shop and mechanical men. This department is not to be charged with material or labor that can be distributed directly to job orders.

Material reclamation department expense is an off-set to the credit for reclaimed material which is taken into the regular refinery warehouse stock.

Material, mechanical and reclamation department expense being handled as suggested above will be distributed monthly and the total department expense cleared monthly or at least at the end of each year.

Department Subdivisions and Accounts

For the purpose of obtaining detail cost classification, the departments are subdivided under the following heads:

LABOR
SUPERVISION
REPAIRS AND MAINTENANCE
MATERIAL SUPPLIES
UTILITY DISTRIBUTION
SUNDRY CHARGES

Under each of these subdivisions account classifications are provided to furnish detail cost information as follows:

Labor

Under the classification of labor the chart of accounts shows four subdivisions.

OPERATING LABOR is to be charged with the wages of the regular operating or shift men of each department. Charges to this account will not vary from month to month unless rates or number of operating men change.

CLEANING EXPENSE is to be charged with labor and material so that the total cost of cleaning can be shown in one amount. This account is to be used in departments where cleaning expense is of sufficient importance to warrant separate classification, such as cracking plant stilling.

UNCLASSIFIED LABOR is to be charged with such wages as can not be classified as operating or cleaning labor. This account will seldom be used by operating departments.

CLERICAL EXPENSE is to provide for the salaries of office and clerical men. Operating departments will have use for this account only when a clerk is used within the department to relieve operating men of clerical work.

Any additional accounts can be added under the labor subdivision depending upon the requirements of the management and operating conditions of the departments.

Supervision

Under the heading of supervision two accounts are provided:

DIRECT SUPERVISION is for the salary and expense of foremen or assistant superintendents who have direct supervision of one or more departments.

INDIRECT SUPERVISION is to be charged with a portion of the salary and expense of superintendents and assistants who have indirect supervision over all departments of the refinery. This expense is prorated on the basis of direct labor charge or some other method which will give a fair distribution of the total salary and expense of superintendents and assistants.

Repairs and Maintenance

Under the heading of repairs and maintenance three classifications are provided.

ORDINARY REPAIRS AND MAINTENANCE account is to be charged with labor and material for the ordinary repairs and maintenance of equipment in use. Charges to this account under ordinary conditions should vary little from month to month. Variations of any consequence can be explained by detail statements.

UNUSUAL REPAIRS AND REPLACEMENTS—This account is to be charged with repair and replacement items of an unusual nature that can be classified as ordinary repairs and maintenance charges and are not handled as off-sets to reserve for depreciation. This classification is used for the purpose of distinguishing between the unusual repair and replacement items and charges for ordinary repairs and maintenance.

CHANGING EQUIPMENT AND DISMANTLING—This account is to be charged with labor for changing equipment within a department that can not be classified as a repair item or changing equipment from one department to another, such as moving a tank, pump, etc. This account is also to be charged with expense of dismantling worn out equipment and for retiring investment equipment that has not been worn out but is of no further use for the department from which it is taken. If a monthly provision is made, as suggested under heading of "Depreciation and Obsolescence," dismantling expense can be spread evenly throughout the year.

The number of accounts that can be

Less labor takes off all the dirt

TO remove caked-on dirt and road grime from tank cars in double quick time, try Oakite cleaning methods.

A solution of an Oakite material applied with a brush loosens film and grease so that it can be washed off with a stream of water. In a fraction of the usual time, every trace of soot, dust, stains and oil is gone, without harm to metal surfaces, without tedious hand labor.

"Oakite in the Oil Industry" tells how to clean tank cars thoroughly and quickly. It also describes Oakite methods for scores of other cleaning jobs. Write for a copy.

Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.

Manufactured only by

OAKITE PRODUCTS, INC.
42C Thames St., New York, N. Y.

OAKITE
Industrial Cleaning Materials and Methods

Tidewater Oil Co. Again Orders Northern Cargo Pumps for New Tanker

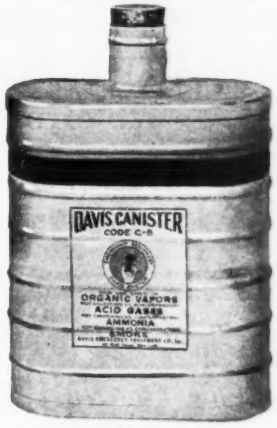
The ten Northern Pumps which this corporation installed recently on its tanker "Tidewater" proved so satisfactory, that the order was duplicated for another new tanker.

These pumps go on following services: Cargo, lube oil, fuel oil, bilge, fire-sanitary, circulating water, lube oil circulating and fresh water.

NORTHERN PUMP CO.
MINNEAPOLIS, MINN.
OFFICES IN ALL PRINCIPAL CITIES

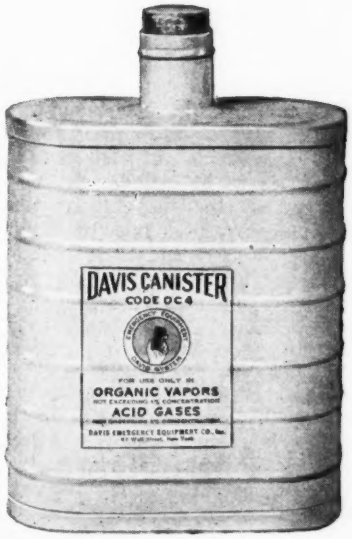
SAFETY B SAFETY D SERVICE

DAVIS CANISTERS



650 CC Capacity

Are available to protect against almost any known gas or combination of gases. You will be delighted with the high absorbing efficiency of Davis Canisters.



2000 CC Capacity

BULLARD-DAVIS
INCORPORATED

67 Wall St., New York City or 275 Eighth St., San Francisco, Cal.

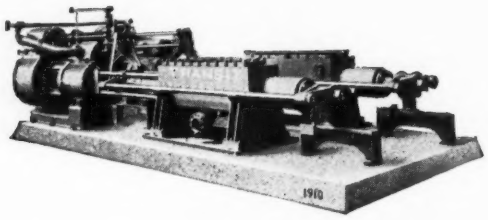
Please send me Bulletins Nos. 201, 202 regarding canisters.

Name .....

Company .....

Address .....

Rigid — Strong
TRANSIT HOT OIL PUMPS



The above is an illustration of a very representative Hot Oil Pump, one of the complete line. Great rigidity and strength are built into TRANSIT Hot Oil PUMPS just the same as they have always been built into other TRANSIT PUMPS.

The pump illustrated is a 32 & 48 x 8½ x 24" TRANSIT Hot Oil PUMP. Capacity 329 gallons per minute, 1500 lbs., pressure, and oil up to 1000° F., in temperature.

NATIONAL TRANSIT
Pump and Machine Company
Oil City, Pa.

New York Philadelphia Pittsburgh Cleveland
Los Angeles Tulsa Houston

Heat Exchangers

THE M. W. KELLOGG CO.
225 Broadway • New York

Houston, Texas.....1514 Petroleum Bldg.
Tulsa, Okla.....Philtower Bldg.
Los Angeles, Cal.....1031 So. Broadway

VAPOR PHASE REFINING
WILL
Increase your gasoline yields,
Improve your gasoline quality,
and
Reduce your refining costs.

THE GRAY PROCESSES CORPORATION
961-975 Frelinghuysen Avenue
NEWARK, NEW JERSEY

used under repairs and maintenance heading will depend upon the requirements of the management. Accounts can be provided to separate labor from material and in sufficient detail to show repairs to each class of equipment accounts used under this heading, it is important that a definite understanding is had as to what constitutes repairs and maintenance charges. If the accounts, as shown in classification of accounts, are used, detail repair and maintenance costs for any equipment in a department could be ascertained from a separate analysis of charges.

Material Supplies

In the account classification, accounts are suggested under this heading which will vary according to the operations of the departments and the requirements of the management. Accounts can be provided to furnish as much detail as is required. This heading does not provide for raw material charges, such as crude oil, casinghead gasoline for blending purposes, packages, etc., but it does provide for oils used as supplies, such as lubricating oils, absorption oils, etc., and all other materials used as supplies that are not a part of the finished product.

Utility Distribution

Under this heading accounts corresponding with the utility departments are provided. These accounts are to be charged with the department's portion of the distributed expense of utility departments. This distribution is made on meter readings, time basis, or some other method to reflect as near as possible the actual services rendered to each department.

Sundry Charges

Under the heading of sundry charges accounts that can not be properly classified under the heading of any of the other subdivisions are provided for. The accounts, shown under this division in the classification of accounts, can be revised to provide as much detail information as required.

"Depreciation of Equipment in Use" is to be charged with normal depreciation of investment equipment actually in use in each department of the refinery.

"Depreciation of Obsolete Equipment" is to be charged with amounts written off to relieve "Investment" of equipment which has been discarded before being fully depreciated because of being replaced by more efficient equipment. This account is considered as a "Plant General" item only and is not necessary if a "Reserve for Obsolescence" has been provided for.

Depreciation and Obsolescence

Refinery costs should include not only labor and material charges but a cost for the use of permanent equipment representing the refinery investment. This cost, charged as depreciation, should take into consideration the estimated life of the equip-

ment used, together with the salvaged value at the time it is abandoned. The use of any piece of equipment costs just as much as the original installation plus the expense of dismantling when it is removed less the salvaged value. Rates of depreciation should be determined from past experience and revised from time to time as required. In addition to the charge to expense for depreciation provision can be made for the expense of dismantling investment equipment when it is of no further use, also for obsolescence if the equipment is dismantled before being completely worn out and depreciated. By providing a reserve for obsolescence and expense of dismantling investment equipment costs can be more evenly spread over the life of the equipment and eliminate the necessity of adding large amounts to the costs in any one period.

Investment Record

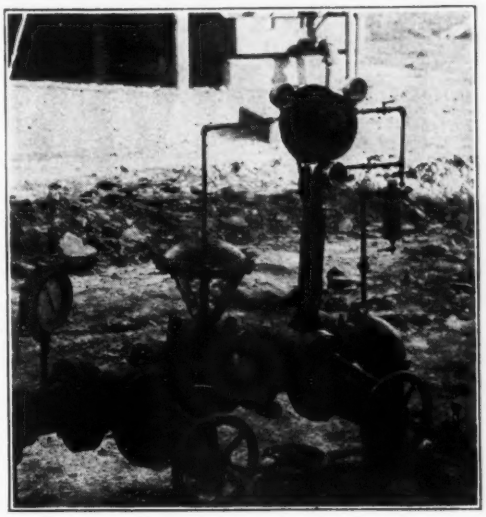
It is essential that a complete investment record be kept for refineries which should classify investment equipment by departments to correspond with classification of accounts for cost accounting purposes. The investment record should show in detail the cost of each piece of equipment together with the amount written off as depreciation. Cost and net value of equipment for each department as shown by the investment record will serve as a basis for distributing depreciation, insurance, taxes, etc. Investment records should be kept up to date at all times and all equipment dismantled written off so that the amount charged to depreciation will represent depreciation on equipment actually in use for each department. The use of investment material transfers covering the movement of any equipment which has originally been charged into investment has been found to work satisfactorily when used in connection with a job order system. The method used to keep the investment records up to date will have to be adapted to the operating conditions of the refinery.

Method of determining cost of production gasoline from skimming and cracking plant operations per skeleton form of statement as shown is based on the theory that the refinery as a whole is operated for the main purpose of producing gasoline from crude oil. All other products produced from crude oil by skimming and cracking plants are treated as by-products and deducted from the total crude oil and manufacturing cost at the net value received from their sale.

Skimming and cracking plant operations are taken as a whole to avoid complications that might arise due to distribution of certain departmental expense. All refinery expense is in-

Tycos Back Pressure Regulator

(Pilot Operated)



THE Tycos Back Pressure Regulator successfully meets the demand for an instrument capable of giving close and consistent back pressure regulation, which the present highly developed and scientific practices of natural gasoline manufacturers demand.

It will maintain constant back pressures on gasoline plant absorbers, accumulator tanks, fractionators or stabilizers, surge tanks, stock vent tanks, re-run stills, residue gas lines, etc. Also on pressure distillate receivers, or gas separators of refinery cracking units.

Close regulation is assured by the high sensitivity of the regulator response and the throttling action of the control valve. With tendency toward the slightest pressure change in the process under control, the valve in the gas discharge line immediately throttles to such a position as is necessary to release the required amount of gas to give a consistently smooth and constant back pressure, as is evidenced in the even line on the recording pressure gauge chart.

Additional information on this installation furnished on request.

Taylor Instrument Companies
ROCHESTER, N. Y., U. S. A.
CANADIAN PLANT, TYCOS BUILDING, TORONTO
MANUFACTURING DISTRIBUTORS IN GREAT BRITAIN
SHORT & MASON, LTD., LONDON

Tycos
Temperature Instruments
INDICATING-RECORDING-CONTROLLING

BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
Wax Distillate Chilling Machines — *Scale Wax Cooling Drums*
Wax Testing Presses — *Paraffine Wax Sweater Plants*
Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers and other Oil Refinery Equipment
Oil Burning Systems — *Complete Power Plant Equipment*

BETHLEHEM STEEL COMPANY, *General Offices, Bethlehem, Pa.*

District Offices

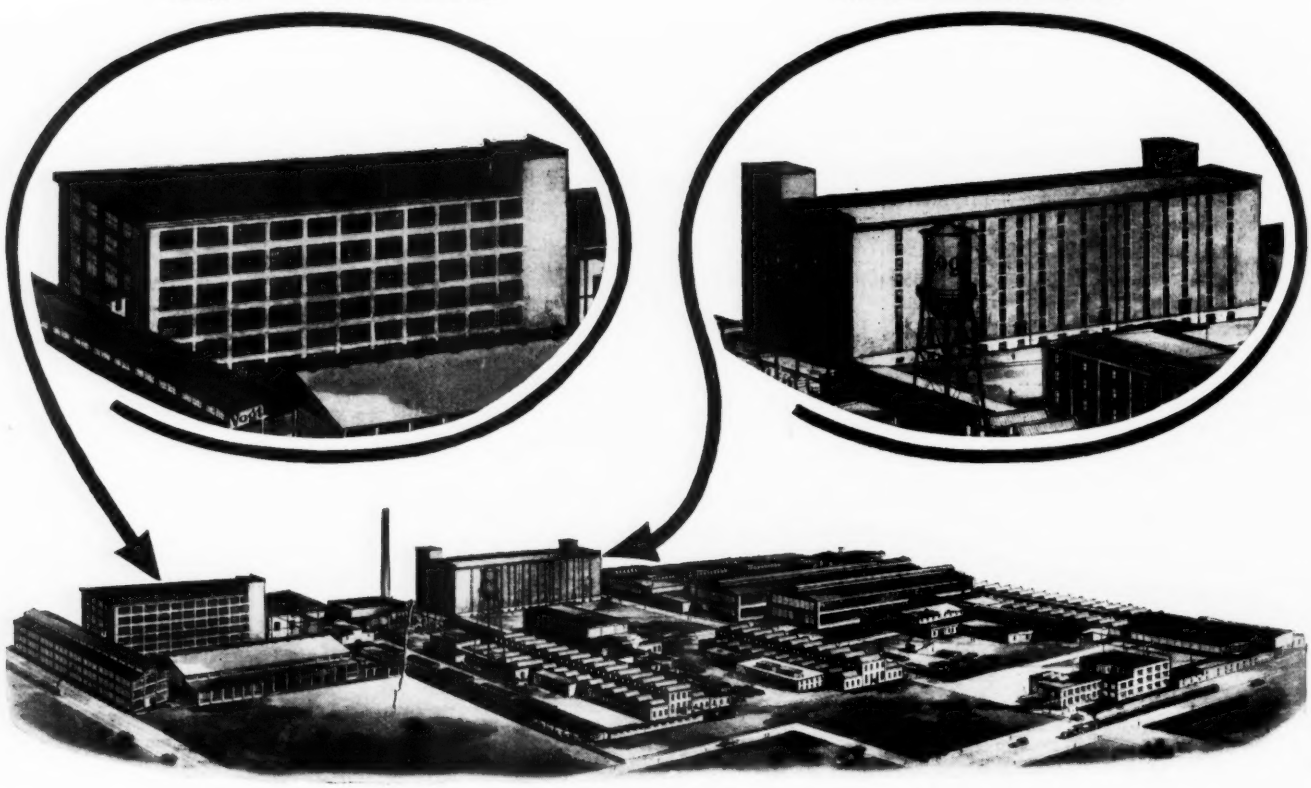
New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo Cleveland Detroit Cincinnati Chicago St. Louis San Francisco Los Angeles Seattle Portland

The Demand For Vogt DROP FORGED STEEL VALVES AND FITTINGS Increases Daily

These two new modern additions to the Henry Vogt Machine Co's nineteen acre plant are a testimony to the increasing demand for Drop Forged Steel Valves and Fittings for high temperature and pressure service. Since our facilities are now practically double we are equipped to adequately meet your requirements promptly from stock.

The new machine shop completely equipped with modern machinery.

The new warehouse has a complete stock for immediate dispatch.



HENRY VOGT MACHINE CO.
(Incorporated)
LOUISVILLE, KY.

New York Chicago Cleveland Dallas Philadelphia

Manufacturers: of OIL REFINERY EQUIPMENT, DROP FORGED STEEL VALVES AND FITTINGS, WATER TUBE AND HORIZONTAL RETURN TUBULAR BOILERS, ICE MAKING AND REFRIGERATING MACHINERY.

cluded in determining the cost of gasoline produced, excepting loading and shipping department expense and depreciation of obsolete equipment. Loading and shipping expense is considered as a handling cost of the finished product and is included in the summary to arrive at the cost of gasoline leaving refinery. Depreciation of obsolete equipment is excluded so that the cost of producing gasoline will be the operating cost and maintenance of equipment actually in use. If it is desired to ascertain the cost of gasoline produced, including depreciation of all equipment, whether in use or not, the amount deducted from manufacturing costs for depreciation of obsolete equipment, per skeleton statement, can be added to "per barrel" and "per gallon" costs.

The ultimate yield method, providing for the elimination of average treating losses from unfinished products, is used in determining the number of gallons of by-products produced. Net realization from by-products is determined by deducting from the billing price the per gallon, shipping, selling and administration costs of total gallons produced. This net realization being deducted from the total crude and manufacturing costs leaves the net cost of gasoline produced from crude oil. To this is added cost of natural gasoline used in blending for total cost of finished gasoline produced.

More Oil Companies Sign Code of Ethics

CLEVELAND

A LIST of signers of the code of ethics, issued by the Federal Trade Commission on Oct. 14, is given below. This list supplements those published in NATIONAL PETROLEUM NEWS in issues for Sept. 11 and Oct. 9.

Alirs & Son, Yates Center, Kans.
Apel Bros. Oil Co., St. Louis, Mo.
Appomattox Hdw. Co., Appomattox, Va.
Beaty & Co., Wise, Va.
Benson's Farmers' Cooperative Grain Association.
Bogalusa Oil Co., Bogalusa, La.
Bradford Oil Co., Springfield, Vt.
Bryon Oil Co., Lawrence, Kansas.
Cowall Oil Co., Springfield, Mo.
Crowell Auto Co., Gretna, Va.
D. & L. Oil Co., Denison, Kansas.
Diamond Oil & Power Co., Scranton, Pa.
Ebensburg Oil & Gas Co., Ebensburg, Pa.
Egan Oil & Sup. Co., Pittston, Pa.
Falls Cities Oil Co., Jeffersonville, Ind.
Farmers Oil Co., Heizer, Kansas.
Farmington Oil Co., Farmington, Vt.
E. M. Fiddler Oil Co.
Gem State Oil Co., Boise, Idaho.
J. M. Gife Garage, Schuylkill Haven, Penna.
Guldner Oil Co., Pratt, Kansas.
F. H. Hansen, Kittery, Me.
Home Oil Co., Soldier, Kansas.
Home Oil Co., Abbyville, Kansas.
Home Oil Co., Ohaga, Kansas.
Imperial Oil Service Co., Scranton, Pa.
The Independent Oil Co.
International Oil Co., Menot, N. D.
Kennobe Oil Co., Augusta, Me.
Lesh Oil Co., Ottawa, Kansas.
Lincoln Ave. Oil Co., Chanute, Kansas.
Luzerne Motor Co., Luzerne, Penn.
McKay Oil Co., Wichita, Kansas.
Martin & Co., Lake City, Kansas.
Metamora Oil Co.
Murdock Oil Co., Murdock, Kansas.
Nelson Oil Co., Mt. Jackson, Va.
Oilrite Corp., Red Bank, N. J.
Pacific Gaso. & Oil Co., Scranton, Pa.
Pasotex Petroleum Co., El Paso, Texas.
J. W. Peel, Boyd, Ala.
Peerless Oil & Ref. Co., Chanute, Kansas.
Petroleum Products Co.
Arthur Richardson, Clinton, Me.
Sammy Oil Co., Irving, Kansas.
San Judy Garage Co., San Ford, Fla.
Schoals Garage, Chambersburg, Pa.
Schriber Oil & Gas Co., Wichita, Kans.
Service Filling Station, Houlton, Me.
Shatton Oil & Sup. Co., Braymer, Me.
Smith & Clark, Inc., Skowhegan, Me.
Standard Oil Co. of Calif., San Francisco, Calif.
Standard Oil Co. of Kansas, Neodesha, Kansas.
Frank Sterne, Joliet, Ill.
Strasburg Service Station, Strasburg, Penna.
Superior Oil Co., Boliver, Mo.
Susauk Oil Co., Susauk, Kansas.
Twin Ports Oil Co., Duluth, Minn.
Utica Oil Co., Utica, Kansas.
Wheat Oil Co., Latonia, Ky.
Whidden Oil Co., Greenville, Ala.
Williams Oil & Fuel Co., Springfield, Mo.
Williams Oil Co., Camden, Mo.
Wiseley Oil Co., Wheaton, Mo.
Witt & Son, Colwich, Kansas.

(*Continued on Page* 72)

The EDELEANU Process

for

Refining with Liquid SO_2

NO loss of distillate
NO production sludge acid
NO plant corrosion
NO loss of SO_2

Yielding

Highest grades of

KEROSENE
TRANSFORMER OIL
TURBINE OILS
LUBE OILS
WHITE OILS
MEDICINAL OILS
NON-DETONATING GASOLINE

In use by leading refiners in U. S. A. and Foreign Countries

For full information apply

AGEFCI
11 W. 42nd St.
New York N. Y.

Woodson County Oil Co., Yates Center, Kansas.
Ford L. Wright, Wichita, Kansas.
Y. D. Service Station, Salem, Mass.
J. W. Young Oil Co., Flemington, Mo.

* * *

Following is a list of oil companies signing the code of ethics as reported by the Federal Trade Commission to the American Petroleum Institute, and announced by W. R. Boyd, Jr., executive vice president of the Institute Oct. 21:

A. & B. Oil Co., No. Creek, N. Y.
Adams Garage, Inc., Provincetown, Mass.
Alex Sadler, Roanoke, Va.
Allentown Oil Co., Allentown, Pa.
Amos Coal Co., Syracuse, N. Y.
Associated Gaso. Co., New Haven, Conn.
Bair Oil Co., Cissui Park, Ill.
Baldwin Oil Co., Lake Preston, S. D.
Barnard Home Oil Co., Barnard, Kans.
Bartles-Maguire Oil Co., Milwaukee, Wis.
Bay State Auto Sup. Co., Mattakan, Mass.
Beacon Oil Co., Geneva, N. Y.
Belcher Bros., No. Welbraham, Mass.
Claude Benedict, Pomeroy, Ia.
Bentley Oil Co., Manchester, Conn.
Berlin Oil Co., Marne, Mich.
Berwick Store Co., Berwick, Pa.
Best Gas & Oil Co., Gilbert, Minn.
Blackwell & West, Roanoke, Va.
Boaz Oil Co., Sylvan Grove.
Fred A. Bourne, Onset, Mass.
Bowden & Northrump, Ashley, Pa.
J. T. Brinkman Oil Co., Albany, Minn.
Bryon Oil Co., Lawrence, Kans.
Burson Oil Corp., Salem, Mass.
E. Campbell, So. Manchester, Conn.
City Garage, Pulaski, Va.
Champlain Motors, Inc., St. Albans, Vt.
Chesshire Oil Co., Kenne, N. H.
Claremont Garage Co., Claremont, N. H.
Clark Garage Hdwre. & Oil, Jolley.
Com'l Iron & Metal Co., Watertown, Conn.
Community Oil Co., Buffalo Center, Ia.
Conley Oil Co., Eau Claire, Wis.
Cons. Paving Co., Orlando, Fla.
Dependable Oil Co., Dodge City, Kans.
Alex K. Dickson, Fredonia, N. Y.
Dublin Hdwre. Co., Dublin, Va.
The Dudley Co., Churdan, Ia.
Elm City Filling Sta., New Haven, Conn.
The Elmwood, Roanoke, Va.
E-S Oil Co., Littleton, N. H.
Fairmount Oil Co., Sunnyside, Ore.
Fairmount Oil Co., Woonsocket, R. I.
Farmers Coop. Grain & Supply Co., Spearville, Kans.
Farmers Community Co., Boone, Ia.
Farmers Oil Co., Heizer, Kans.
Farmers Union Oil Co., Van Hook, N. D.
Farmers Union Ser. Co., Laurens, Iowa.
Farmville Oil Co., Farmville, Ia.
Firth Oil Co., Firth, Neb.
Fitch Bros., Mt. Carmel, Conn.
Five Mile Pond Station, RFD, Kukuvoo, N. Y.
Ft. Dodge Oil Co., Ft. Dodge, Ia.
F. & F. Oil Co., Rochester, N. Y.
Garham Oil Co., Garham, N. H.
Georges Gas & Oil Co., Knivain, Ia.
Greeson Oil Co., Fairbury, Neb.
Gretna Oil & Sup. Co., Gretna, Va.
W. H. Groumell, Binghampton, N. Y.
Guarantee Oil Co., Aurelia.
Gun Oil Co., Hagerstown, Md.
Hallam Oil Co., Hallam, Neb.
Harmon Oil Co., New Haven, Conn.
Harris Motor Co., Pulaski, Va.
Haveland Oil Co., Haveland, Kans.
L. F. Heinrich, Armstrong, Ia.
Highway Service Sta., Kirkville, Mo.
Hires-Jones Oil Co., Branson, Mo.
Home Oil Co., Fairbury, Neb.
Home Oil Co., Kensington, Kans.
Home Oil Co., Natoma, Kans.
Home Oil Co., Soldier, Kans.
The Howard Co., New Haven, Conn.
Ida Grove Oil Co., Ida Grove, Ia.
Independent Lub. Co., Topeka, Kans.
Independent Oil Co., McCluskey, N. D.
Keeton Oil Co., Selina, Kans.
Kent Sales, Horton, Ia.
Laconia Serv. Station, Laconia, N. H.
Leodler Oil Co., Benndy, Mich.
Livermore Oil Co.
McClew Corp., Newfane, N. Y.
McLean Oil Co., Lexington, Neb.
McCoys Oil Co., Humboldt, Ia.
McCullough Oil Co., Glasco, Kans.
Mid-day Filling Sta., New Britain, Conn.
Ed Miller, Inc., Meriden, Conn.
Minwaux Oil Co., Weppany, N. J.
Monarch Oil Co., Tulsa, Okla.
Morgan Oil Co., Versailles, Mo.
Newton Oil Co., Hornell, N. Y.
Northern Auto Co., Gaylord, Mich.
Northern Auto Co., Onaway, Mich.
Northern Auto Co., Petoskey, Mich.
Northern Auto Co., Sheboygan, Mich.
North Jersey Oil Co., Lennox, N. J.
Oklahoma Oil Co., Minneapolis, Minn.
John Orino, Rumford, Me.
Owl Garage, Inc., Wymore, Neb.
Paragon Refining Co., Toledo, O.
Paramount Pet. Prod. Co., West Haven, Conn.
Payuds Motor Co., Roanoke, Va.
Penn. Consumers Oil Co., Council Bluff, Iowa.
Wm. R. Peters, Portland, Conn.
Phoenix Oil Co., Plumella, Pa.
Pocahontas Oil Co., Pocahontas, Ia.
Pulaski Filling Sta., Pulaski, Va.
Pulaski Motor Co., Pulaski, Va.
Prescott Oil Co., Webster, Mass.
Protective Coop. Oil Co., Protective, Kans.
Rayon Oil Co., Colwich, Kans.
Rippey Oil Co.
Rhudy Oil Co., Lincoln, Kans.
Reb Oil Co., Canada, Kans.
Red Star Oil Co., Lindsborg, Kans.
Red Wing Gas Co., Middletown, Conn.
Regent Oil Co., Regent, N. D.
Rockford Oil Co., New Rockford, N. D.
Rocky Mount Fill. Sta., Rocky Mount, Vt.
Roland Oil Co., St. Louis, Mo.
Rosier Oil Co., Hutchinson, Kans.
R. S. Stone Oil Co., Hudson Falls, N. Y.
Sauson Auto Top Co., Providence, R. I.
Seacoast Oil & Supply Co., St. Augustine, Fla.
Shade Oil Co., Kingsley, Ia.
Smith Filling Sta., East Radford, Va.
Sommers Oil Co., Denver, Colo.
Specification Motorist System, West Palm Beach, Fla.
Stacy Oil Co., Fulton, N. Y.
Stamford Oil Co., Glenbrook, Conn.
Standard Cycle & Auto Co., Winsted, Conn.
Star Oil Co., Humbolt, Neb.
St. James Oil Co.
S. & S. Oil Co., Delphin, Kans.
E. J. Timmins, Cherokee, Ia.
Tousey Distel Oil Co., Lesuem, Minn.
Tri-City Oil Co., Tescott, Kans.
Troxel Bros. Oil Co., Lohville, Ia.
Twin Motor Co., Galax, Va.
E. Vadmers & Sons, No. Adams, Mass.
Valley Oil Co., Middletown, Conn.
Vandenburg Bros. Oil Co., Holland, Mich.
Veeder Oil Co., Oshkosh, Neb.
Walnut Hill Oil Co., Woban, Mass.
Wausau Oil Co., Wausau, Wis.
Wayco Oil Corp., Detroit, Mich.
Waynesboro Auto Co., Waynesboro, Va.
H. H. White Co., Kalamazoo, Mich.
White Star Oil Co., Whitefall, Kans.
The Wicker Corp., Chicago, Ill.
Wilson Oil Co., Paxten, Ill.
Wilson Oil Co., No. Syracuse, N. Y.
Geo. Winland, Winland, Ore.
Wyoco Serv. Stations, Attica, N. Y.
R. F. Young, Cattaraugus, N. Y.
Zuhlke Oil Co., Bancroft, Neb.

Casper Rates Are Again Attacked

TULSA, Oct. 31.—A complaint against the relationship of freight rates on refined products from Casper, Wyoming to points in North Dakota, South Dakota, Iowa and Minnesota, to rates from group 3 to the same points, has been filed by the Standard Oil Co. of Indiana with the Interstate Commerce Commission. It was filed Sept. 14, and is Docket No. 22714.

The complaint reopens a former rate controversy in which the I.C.C. ruled against the Standard of Indiana. The new one, as did the former complaint, probably will bring in the refiners in Oklahoma, Kansas, Louisiana and Arkansas.

The original complaint followed the publication by Northwestern railroads of rates somewhat lower than those which had been recommended by the I.C.C. as equitable. Upon investigation the I.C.C. ordered the railroads to abandon the rates which they had published and to publish the rates which had been recommended by the Commission.

The case has not been set down as yet for hearing.

Letters to the Editor

National Petroleum News

(The following letter and enclosure was received from a prominent oil man not associated with Harry F. Sinclair):

"POSSIBLY the enclosed letter from Mr. H. F. Sinclair to the Editor of the Philadelphia Evening Ledger, and published in the recent issue of the Ledger, may have escaped your notice.

"As one who has perhaps more knowledge of the facts than many who have condemned Mr. Sinclair, who still believes in his complete innocence with respect to the Teapot Dome transaction, and who believes also that, instead of being condemned for his action in refusing to answer certain questions put to him by the Senate Committee, he should have been awarded a crown of gold, and who believes also that Mr. Sinclair's statement as given to the Philadelphia Evening Ledger is 100 per cent true, I would ask that, in justice of Mr. Sinclair, you publish his statement in an early issue of the News."

MR. SINCLAIR'S SIDE

To the Editor of the Evening Ledger:

Sir—In a recent issue of your paper you approve editorially the statement of Attorney General Mitchell in the jury-shadowing case when he says:

> Executive clemency under these circumstances would undermine the confidence of the people in the administration of justice.

This directs attention solely to the popular effect of a commutation, regardless of guilt or innocence. But in the very same statement the Attorney General had already admitted my innocence of any act of contempt when he said:

> While no corrupt purpose was actually consummated, he was firmly persuaded that the jury-shadowing operations were conducted with sinister and ulterior purpose of influencing the jury.

Note well here the admission that no "sinister purpose" had been accomplished. He therefore rests upon a guess (it could be nothing else) as to my intent, and he was wrong.

As a matter of law, as laid down by the United States Supreme Court, "intent" is entirely immaterial even if known. Chief Justice Taney, one of the most distinguished jurists in the history of the Supreme Court, said in a decision:

> As regards the question as to whether a contempt has or has not been committed, it does not turn upon the intent of the party but upon the act which he has done.

First—I had no "sinister" intent. I had good reason to suspect that certain persons interested in seeing me convicted on the charge of conspiracy in this case might approach the jury, and if they did I wanted to know it.

Second—By my express order no agent of mine approached or influenced the jurymen in any way, as they testified. They did not even know they were being watched.

Is it unreasonable to ask that the courts and their officers be guided in their opinions and acts by the law and the evidence, instead of by guesses or by inferences, unsupported by evidence?

H. F. SINCLAIR.

Washington, D. C.

Dear Editor:

We are regular readers of your valuable paper and its contents always has our personal attention. Yesterday we got to hand your issue of September 18th.

Re Visiting Around The Refineries by Mr. Truesdell, (page 74), in the last paragraph you are writing about oil coolers "however, so far as I know, no car as yet is fitting such a cooler." May we draw your attention to the "RENAULT" AUTOCARS, of Billancourt, France? We have a car of that type, a "VIVA STELA," (six cylinders, 75 x 120) 15 H.P., last type and all the cars of this type have oil coolers, since about 10 months. The engine is running beautifully and the oil remains absolutely cool, even at a speed of 60-70 miles p.h. during long periods.

Some weeks ago we made a non stop journey of 115 miles at constant high speed on a rather hot day. At the end we stopped and during luncheon time let the oil flow out and had new oil put in. It took quite a long time to have it emptied; the old oil was not even quite warm! We find the Renault oil coolers excellent; they certainly are excellent for lubricating sakes, (not for the oil jobbers—the oil is lasting longer, yes even rather too long!) We might mention, that we have no shares in the Renault manufactory and have no interest whatever in that particular motorcar manufactory.

J. D. Dyserinck, director, N. V. Oliehandel Van Dyserinck Zonen, Haarlem.

If

you haven't used

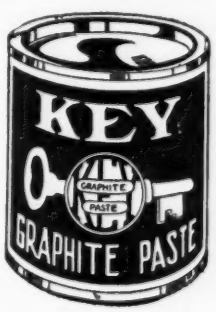
KEY GRAPHITE PASTE

mail this coupon

It's getting to be exceptional when we find a firm in the petroleum field that doesn't use Key Graphite Paste. But we are still offering the Free Key Graphite Test to anyone whose equipment is suffering from leaky pipe line, gasket or other joints.

Key Graphite Paste is a greaseless, non-setting compound that is not penetrated by the thinnest oil or petroleum product. It prevents corrosion and oxidation, preserves metals, defies vibration, holds still tighter with heat, and permits connection to be broken readily when necessary.

Make the test that has convinced the largest companies in the refining, storage and marketing branches of the industry. Put Key Graphite Paste to the hardest job you can find in sealing lines carrying Gasoline, Kerosene, Hot Oil, High Pressure Steam, Acids, etc., and watch the results. Then you be the judge. Mail the coupon today for a liberal trial supply.



Listed by National Board of Fire Underwriters

— — — FREE TEST SUPPLY — — —

N. P. N. 11-6-29

Key Boiler Equipment Co.
East St. Louis, Ill.

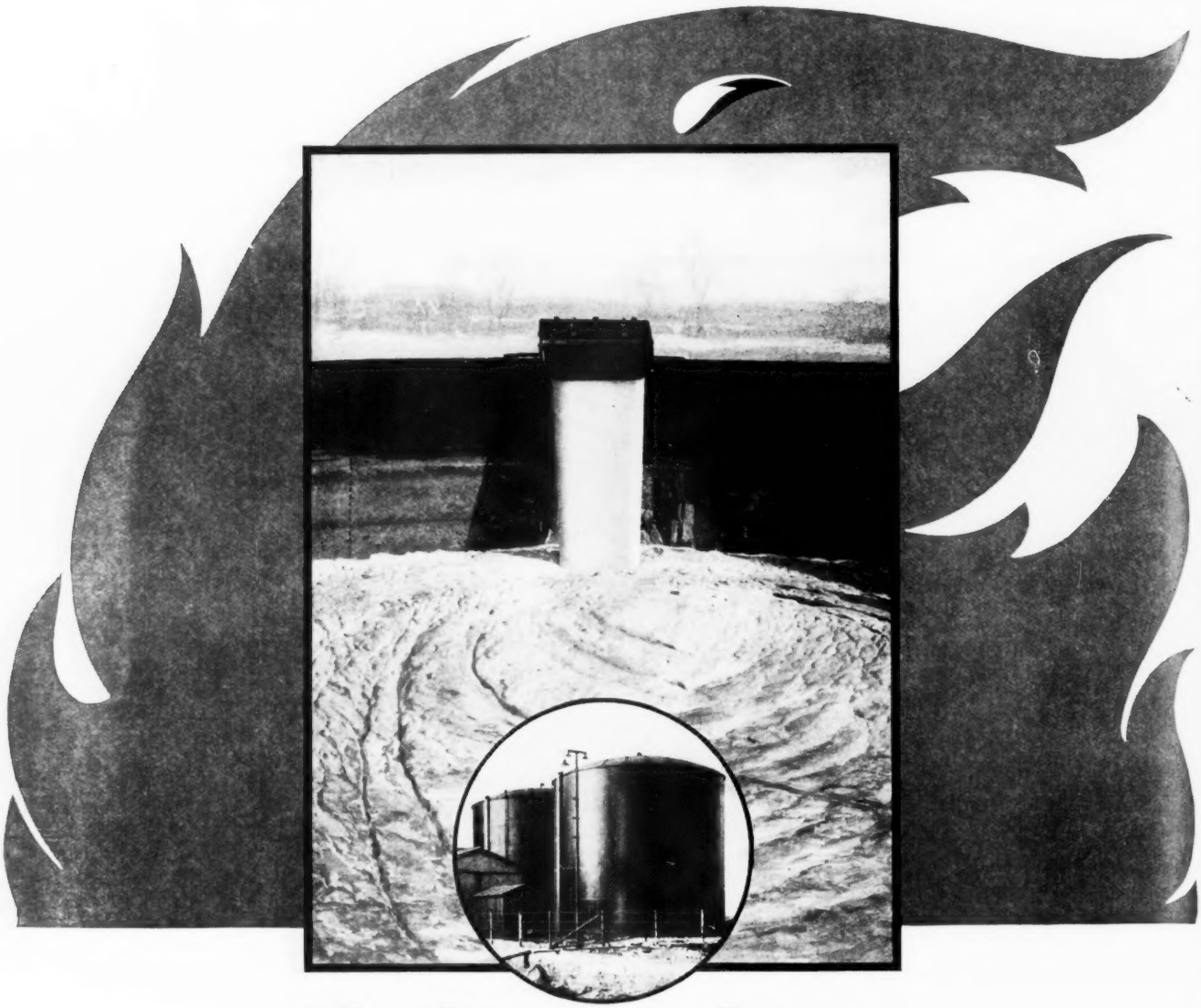
Send me a free test supply of Key Graphite Paste.

Company.....

Address.....

Requested by.....

KILL FIRE WHILE IT IS YOUNG



The FOAMITE System has never had a failure!

No matter what the early stages of the fire may have been, the ending has always been the same when a FOAMITE Two-Solution System stands guard. There has never been a failure to extinguish a tank fire where the System was a genuine FOAMITE System—designed, installed, and maintained by American-LaFrance and Foamite Engineers.

The application of *Firefoam* to the surface of burning oil, in adequate quantity and at the correct rate of flow, is not just a matter of chemicals, hose lines, pipes and pumps. It requires a system which coördinates all these factors—and which will operate efficiently, as a unit, when fire breaks out.

Back of the FOAMITE Two-Solution System are five *specialized* engineering groups. Design—installation—mechanical inspection—chemical supervision—development. No detail is overlooked by this *complete* service.

Most oil companies, here and abroad, know that halfway measures and experiments with home-made systems may be—and have been—costly. Today over 90,000,000 barrels of oil are guarded from fire by FOAMITE Two-Solution Systems.

Our representatives are located at points convenient to all principal producing and refining centers. They will gladly survey your fire hazards and make recommendations. American-LaFrance and Foamite Corporation, Engineers and Manufacturers, Dept. E-34, Elmira, N. Y.

AMERICAN-LAFRANCE AND FOAMITE PROTECTION

A Complete Engineering Service

For Extinguishing Fires

Station Gardens Are Sales Help Says Prize Winner

F. H. Taylor
owner of the prize winning station, stops to smile for the camera man on his way to serve oil to a customer

THAT an attractive display of flowers at service stations often proves a stronger magnet for customers than even a highly advertised or well known brand of gasoline or motor oil, is the opinion of F. H. Taylor, who recently won first prize in a newspaper contest to find Cleveland's most attractively landscaped station.

This contest was launched during the summer by a Cleveland newspaper and judged by eight garden clubs of the city. More than 150 stations competed, including those of 10 leading oil companies of Cleveland.

Against this rather high-powered competition, Mr. Taylor, who owns and operates but one station, was able to capture first prize, which netted him $100 in cash and a bronze plaque which hangs upon the station's outer front wall.

A National Refining Co. station at Clifton Blvd. and Baltic Road won second prize and the Standard Oil Co. also won several prizes.

"I think flowers and shrubs are a great asset at any service station," Mr. Taylor said.

"Women especially notice them and like to drive in to look at them. I always tell them to pick as many as they wish and many of them do get out of their cars to pick a few."

Forty per cent of his customers, Mr. Taylor estimates, are women. They often comment on the neat and tidy appearance of the station and ask him questions about the kinds of flowers he has there, how he takes care of them, and so on.

"I don't take any particular care of them nor choose any particular kinds of flowers," he said. "Sometimes I have taken handfuls of seed and just put them into the ground, not even knowing what was coming up."

He spends no extra money on the flowers. He has a scheme whereby he keeps his gardens, flower boxes and baskets filled all the time. He sells potted plants at the station on Decoration day, Mother's day, or any of the days for which flowers are especially appropriate. Whatever the customers don't buy, he keeps and puts into the ground. He has a large sign at the station telling motorists that there are flowers for sale. These he buys from a greenhouse. Last Decoration day he sold between 50 to 75 plants, he says. This helps him not only to make a little extra money, but it brings him new customers, increased gasoline sales, and additional plants that he can use at the station.

The station lot is semi-circular, with a bank, about two feet high, built around it like a wall. The side of the bank is sown to grass, while the flowers, shrubs and evergreens are planted on the top.

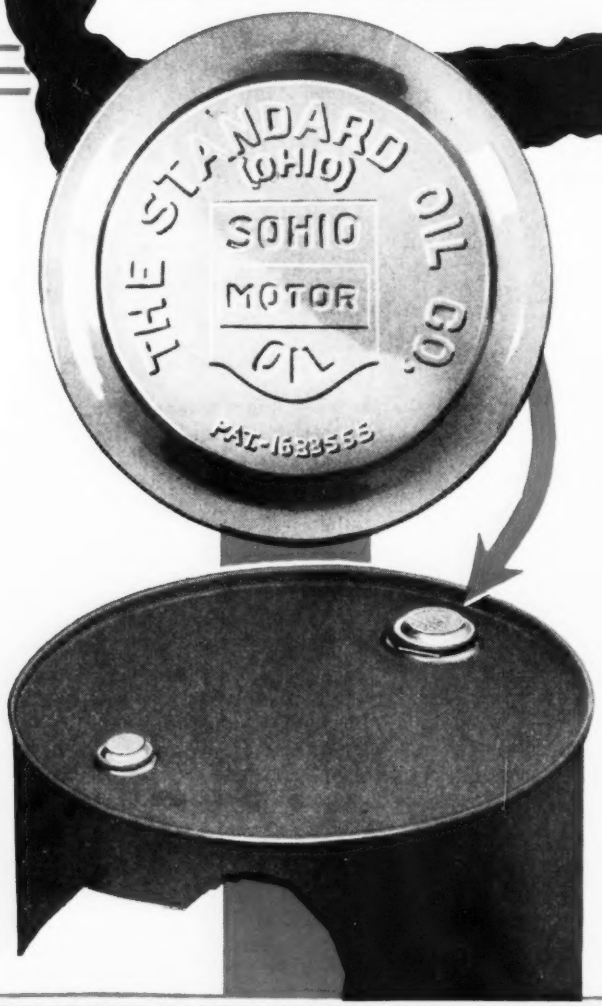
The flowers that are used are selected mostly for the seasons in which they bloom. All colors of tulips are used as early spring bloomers. When these are gone come the geraniums, snap dragons, dahlias, gladioli, ageratum, and petunias for

Part of the shrubbery and flowers that helped F. H. Taylor to capture first prize in a station contest in Cleveland. A trellis to the right at the back is covered with climbing roses during the summer, while hanging baskets and flower boxes add to the general effect. Stations were judged for their landscaping, rather than architectural design of the building

OUR CLAIMS VERIFIED by STANDARD OIL *of* OHIO

The same exacting care used in the manufacture and distribution of Sohio Ethyl gasoline is practised in the handling of New Sohio Motor Oil. A tamper-proof, patented cap seal is attached to each drum of New Sohio Oil. This represents the O. K. of the Standard Oil of Ohio on the product, and is your assurance of uniform high quality.

Clipping from a recent advertisement for the Standard Oil Company of Ohio



Here is Double Proof of Quality—

1—High Quality in the product which the Standard Oil Company of Ohio is determined to protect.

2—High Quality of protection and prestige afforded by Tamper-proof

CAP SEAL

This patented Seal for Drums has earned the unqualified endorsement of industrial leaders—in Europe and America.

This is not only because they afford security against dilution or substitution but because of their efficiency, simplicity and ease of application. *Cap Seals require 30% less time to apply than wire seals.* Write for further information.

Fully protected by patents and manufactured exclusively by

AMERICAN FLANGE & MANUFACTURING CO.

4646 Arthington Street — Chicago, Illinois

the summer. October finds geraniums, salvia and dahlias bearing up well. In all, about 20 varieties are used, although the accompanying picture shows only a few varieties because it was taken in October. Some 500 blossoms are gone that thrive during the warmer summer months.

There are small pines, privet hedges and English ivy also. The ivy is used mostly in flower boxes and hanging baskets. When the station is in full bloom, there are boxes for every window, and climbing roses in profusion on trellises at the back of the lot. Evergreens are planted at the back corners of the station building, but these have been removed to the top of the bank.

It does not take a great deal of time to plant and tend the flowers, Mr. Taylor says, and one of the reasons he started his gardens was that he wanted to keep busy between gasoline and oil sales and greasing work.

Another conclusion Mr. Taylor draws from his own experience and observations is that customers appreciate honesty, whether it's honesty in measuring gasoline or honesty of opinion in telling them what their car needs.

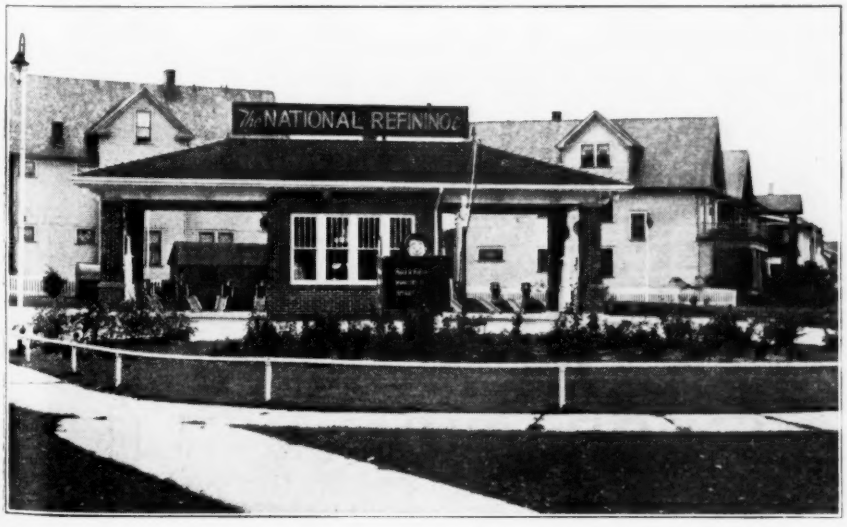
"I never tell a customer that his car needs oil, just to make a sale, if it doesn't need it," he says. "When I do recommend more oil or grease, they submit without any doubts or questions."

Women particularly, he says, appreciate this. They have told him that they felt at some stations they had patronized that the more important thing there was to make the sale rather than tell the customer of his actual needs.

That this kind of service is being appreciated is revealed in the fact that no matter where Mr. Taylor goes or what gasoline or oil he sells, his customers go with him. Many of the customers he now has used to patronize the stations he formerly attended for two other oil companies, some of them coming all the way from Chagrin Falls and Gates Mills, points about 12 or 15 miles distant from his station. Mr. Taylor's station is on Noble road, near Mayfield road, on Cleveland Heights, high class residential district of eastern Cleveland.

He handles products of the Paragon Refining Co.

The Standard Oil Co. of Ohio won the trophy for making the best showing in the contest. Stations of oil companies receiving honorable mention were those of The Texas Co., Commonwealth Oil Co., the Pennzoil Co., Shell Petroleum Corp., Sinclair Refining Co., and Cities Service Oil Co.



Deep red roses, flowering shrubs, vines and spacious lawns and drives, won second prize for this National Refining Co. station at Clifton boulevard and Baltic road, Cleveland

New Stations Building

Note: Material used in this column is principally taken from the newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Pine Bluff, Ark.—Specification Motoroil System, service station.
Jackson, Mo.—Phillips Petroleum Co., filling station.
Newton, Kans.—Roy Calbeck, service station.
Clarinda, Ia.—Mr. Brokaw, service station.
Newark, O.—Shell Petroleum Corp., filling station.
Osage, Ia.—Standard Oil Co., filling station.
Griggsville, Ill.—Standard Oil Co., filling station.
Lawrenceburg, Ind.—Edwin Heck, filling station.
Effingham, Ill.—Standard Oil Co., filling station.
Platteville, Wis.—Mid-Continent Petroleum Corp., filling station.
Bowman, N. D.—Farmers Union, bulk station.
Lamar, Colo.—Frank Sayler, service station.
Fairfield, Tex.—Gulf Refining Co., filling station.
Kansas City, Mo.—J. H. Speas, filling station.
Kansas City, Mo.—E. B. Johnson, filling station.
Muskogee, Okla.—J. H. Keaton, filling station.
Killeen, Tex.—Gulf Refining Co., filling station.
Fort Worth, Tex.—Gulf Refining Co., filling station.
Yoakum, Tex.—Gulf Refining Co., filling station.
Poplar Bluff, Mo.—B. F. Davenport, service station.
San Antonio, Tex.—Edwin Neiman, service station.
Harlington, Tex.—Gulf Refining Co., service station.
Duncan, Okla.—Clark Edrington, filling station.
Shelbyville, Ind.—Clyde Campbell, filling station.
Mendota, Ill.—Peter Elberger, filling station.
Bloomington, Ind.—Cecil Harles & Fred Hazel, filling stations.
Norton, Kans.—Phillips Petroleum Co., bulk station.
Great Bend, Kans.—Clarence White, service station.
Davenport, Ia.—Motor Service, Inc., service station.
Minneapolis, Minn.—Standard Oil Co., service station.
New London, Ia.—Mid-Western Battery & Electric Co., filling station.
Mitchell, S. D.—White Eagle Oil & Refining Co., filling station.
St.Ansgar, Ia.—Champlin Refining Co., filing station.
Raymondville, Tex.—Humble Oil & Refining Co., service station.
Chariton, Ia.—Phillips Petroleum Co., filling station.
Lincoln, Neb.—W. C. Van Andel, filling station.
Wheeling, W. Va.—Mr. Frost, filling station.
Hartford, Conn.—James H. Wall, filling station.
Macon, Ga.—The Texas Co., filling station.
Greensboro, N. C.—Standard Oil Co., filling station.
Pittsburgh, Pa.—John H. Downes, service station.
Erie, Pa.—W. G. Haas, filling station.
Newark, N. J.—Shell Eastern Petroleum Products Co., filling station.
Monessen, Pa.—Harrison Fuel Co., service station.
Bristol, Va.—C. W. Bondurant & H. E. Jones, garage and service station.
Meyersdale, Pa.—Sinclair Refining Co., filling station.
Camden, N. J.—Joseph Porreca, filling station.
Kokomo, Ind.—Farm Bureau Oil Assoc., filling station.
Akron, O.—Refiners Oil Co., service station.
Swainsboro, Ga.—American Oil Co., filling station.
Troy, N. Y. —North End Auto Supply Co., service station.
Savannah, Ga.—Atlantic Refining Co., filling station.
Baltimore, Md.—Benjamin Beck, filling station.
Millen, Ga.—Gulf Refining Co., filling station.
Savannah, Ga.—Gulf Refining Co., filling station.
Washington, C. H., O.—Refiners Oil Co., filling station.
Columbus, Ind.—William J. Loy, filling station.
Plattsburg, Mo.—M. J. Woodward, filling station.
Abilene, Tex.—Cities Service Oil Co., two filling stations.
Independence, Ia.—Shell Petroleum Corp., service station.
Houston, Tex.—Humble Oil & Refining Co., filling station.
Noblesville, Ind.—Indian Refining Co., filling station.
Georgetown, Ill.—Shell Petroleum Corp., filling station.
Newark, O.—Refiners Oil Co., filling station.
Rutherford, Tenn.—Gulf Refining Co., filling station.
Boonville, Mo.—J. R. Miller, filling station.
Texhoma, Okla.—Consumers Association, service station.
Mount Pleasant, Ia.—Mid-Continent Petroleum Corp., filling station.
Minneapolis, Minn.—F. C. Dencker, filling station.
Minneapolis, Minn.—Ernest M. Ganley Co., Inc., filling station.

Established Loreco Quality Will Hold Your Dealers

The rapid increase in Loreco tank car sales as well as the public's verdict at Loreco retail outlets can only mean one thing.

Loreco's uniform quality, and high standard of that quality, makes and holds friends.

Repeat your orders for Loreco Master Motor Fuel and your customers will get the habit of repeating their orders with you.

Immediate, prompt and speedy shipment from our refineries unexcelled in their location.

Write *Wire* *Phone*

Loreco Ethyl Gasoline
Loreco Special Naphthas
Loreco Kerosene
Loreco Tractor Fuel
Loreco Furnace Oils
Loreco Diesel Fuels
Loreco Industrial Fuel Oils
Loreco Stoddard Solvent
Loreco Absorbing Oils
Loreco Asphalt

GASOLINE LORECO MOTOR OIL

LORECO

MASTER MOTOR FUEL

LOUISIANA OIL REFINING CORPORATION

Producers *Refiners* *Marketers*

SHREVEPORT, LOUISIANA

Personal Calls Bring Station Business

MIDDLEPORT, Ohio

PERSONAL solicitation has been used by Dave Farmer to build business for his service station here. Each morning Mr. Farmer makes calls through the town. He seeks out old customers who have not been in his station recently, and solicits the patronage of new customers.

Living in a town of about 1700 persons he knows everyone personally. His approach of course depends upon the person. Some topic of conversation interesting to the customer is easy to find. Then, if the customer has not been in the station lately, Mr. Farmer inquires if something was wrong with the service or with the products. If the car owner is not a customer Mr. Farmer invites him down to his station to try his products.

Above all Mr. Farmer does not approach a man if he is busy. He side steps the call, returning when the customer will have time to talk.

New car owners are a source of calls also. Whenever Mr. Farmer hears of someone buying a car, or trading in, he sees the man as soon as possible, inviting him to try his gasoline, oil, and lubrication service.

When he starts out each morning Mr. Farmer usually has a definite number of calls in mind. As he meets persons on the street, or in their place of business, he stops to give them his sales talk. He does not spend a definite amount of time soliciting. Some mornings he makes only a few calls, other days he will spend four or five hours on the street.

While working at the station in the afternoon and evening he goes over his list of customers mentally, recalling when last some particular car has been in the station and whether he ought to make a call the next day on its owner. If a customer is partial to some gasoline brand Mr. Farmer offers some of his goods for a comparison. He will drain the tank, and put in five gallons of his gasoline. Mr. Farmer accompanies the driver on a short trip about the town to demonstrate that his gasoline is the equal of that to which the customer is partial.

Mr. Farmer is preparing to supplement his personal solicitation work with direct mail letters. He has written a letter suggesting the change to winter oil and grease. The letter was to be sent out recently, but the evening before it was scheduled on the presses Mr. Farmer heard a report over the radio of warmer weather. He immediately delayed printing the letter until the weather would be suitable for a cold weather motor suggestion.

Dave Farmer's story is similar to that of many men who have passed the age of 40 in recent years and find employment office doors closed on account of their age. Mr. Farmer struck his stride again by taking over a service station.

During the war Mr. Farmer was in charge of a clothing store in Middleport. The proprietor was physically unable to manage the business. The son was in the army. Several offers from clothing stores in large Ohio cities were refused by Mr. Farmer as he thought his duty was to carry on with the local store.

Following the war Mr. Farmer was given a contract with the store at a comfortable salary. The business, however, slipped away and his contract became worthless. For a time he took orders from house to house for men's furnishings. This business, however, was too uncertain so Mr. Farmer cast about for other work.

Clothing stores in the larger cities refused him, although only 44 years old then, but his hair was silver. Mr. Farmer took over a station owned and operated by the Indian Refining Co. in Middleport, and has been operating it for the past three years. A year after taking over the station he returned to Columbus, O., and thanked the employment manager of a large department store for refusing to employ him, as he was well satisfied that going into the oil business was better than clerking in a clothing store.

The gravel Hill Service station of Dave Farmer's at Middleport, Ohio. Mr. Farmer is standing in the foreground

"THE MAN OF DECISION IS THE MAN WITH A VISION."

Decide *today* to read at least one good book devoted to your particular branch of the oil industry. Get the *reading habit.* It will give you vision and pay you big dividends.

The OIL MAN'S BOOKSHELF will help you select books you can study with the greatest profit. If you don't find the subject you are interested in below, write us. We will be glad to get the book you want.

OIL PRICE HANDBOOKS

Have you a complete record of REFINERY prices; TANK WAGON markets; EXPORT prices; CRUDE prices—

For quick reference and comparison with today's prices?

The OIL PRICE HANDBOOK is the only complete record of oil markets for a whole year, compiled in one handy volume for quick reference. Cloth bound—marginal index—9″ x 6″—146 pages.

Oil Price Handbook for 1928 .....$5
Oil Price Handbook for 1927 .....$5
Oil Price Handbook for 1926 .....$5
Oil Price Handbook for 1925 .....$6
Oil Price Handbook for 1924 .....$6

Send for these OIL PRICE HANDBOOKS *now*, before they are all gone.

ACCOUNTING for the PETROLEUM INDUSTRY

"Accounting for the Petroleum Industry" by D. F. Morland and R. W. McKee, is one of the most practical and comprehensive works on accounting principles and procedure for all branches of the oil industry—production, transportation and storage, refining, marketing.

Accounting for each branch is discussed separately; description of technical practices is given, and the accounting problem to be solved in each activity is set forth together with sample forms in use; tables for depreciation rates, etc.

For refinery accounting this book recommends the "weighted selling ratio method" which is described in detail and which has the advantage of determining for every product a cost which will allow for a reasonable profit when disposition is made thereof.

"Accounting for the Petroleum Industry" is carefully prepared and the most practical book written on the subject of accounting for the oil business.

304 pages—Price $4

DECIMAL INDEX OF PETROLEUM TECHNOLOGY

By L. C. Uren

If you want an easy, inexpensive method of referring quickly to important current articles on oil producing, refining, natural gasoline manufacture or marketing—

The Decimal Index of Petroleum Technology tells you how.

L. C. Uren, head of the petroleum engineering department of the University of California is the author of this new abstracting and indexing system for oil men in all branches of the industry.

No longer do you have to rack your brain for hours—perhaps days—to recall where you saw some particular article on "shell stills" or perhaps "diamond drilling" or a certain "oil merchandising" article.

This simple indexing system as described in the Decimal Index of Petroleum Technology will put you in close touch with important articles on all phases of petroleum developments.

Price $1

Cut out and mail

NATIONAL PETROLEUM NEWS
Room 702, 1213 West 3rd St., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $_____
(Add 15 cents for foreign postage)

- ☐ *Oil Price Handbook — $5*
- ☐ *Accounting for the Petroleum Industry — $4*
- ☐ *Decimal Index — $1*

NAME _____

Address _____

_____

_____

Furnace Oil Consumer May Order Oil By Grade Number This Season

CLEVELAND

OUR industry is about to enter the first season of marketing domestic and industrial burner oils under a plan of designating oil requirements by grade number, rather than by gravity, color, or local terminology. In fact, gravity and color are ignored in the standards; the specifications being based on flash point, water and sediment, pour point, distillation test, and viscosity.

Under the plan the burner manufacturer would designate the grade of oil recommended. These grades would be produced by the refiner and marketed by grade number. The burner owner would purchase his oil requirements by asking for the grade number designated for his burner. There are three grades, No. 1, 2, and 3; one set for domestic fuel oil and another set for industrial fuel oil.

The specifications for the grades were compiled by the Bureau of Standards, at the request of the American Oil Burner Association, in cooperation with the American Petroleum Institute, interested individual refiners and distributors, and the American Society for Testing Materials. A meeting was held early this year. The specifications went into effect July 15.

A standing committee, representing all interested elements, was appointed to receive comments and suggestions. At the end of the first year of the specifications the committee will meet to consider what changes, if any, are to be made.

The specifications are to be published soon in a government bulletin entitled "Domestic and Industrial Fuel Oils—Commercial Standard CS12-29."

Blanks for acceptance of the standards were mailed to those interested in the production, distribution and use of fuel oils, and a sufficient number have responded so the program can be put into operation.

Accompanying tables give detailed requirements for domestic and for industrial fuel oils. Specification details follow:

SCOPE

1.—These specifications cover light, medium, and heavy domestic fuel oils, and light, medium, and heavy industrial fuel oils for domestic and industrial oil burning equipment.

GENERAL REQUIREMENTS

2.—Properties—Grades 1 to 4 inclusive, shall be hydrocarbon oils free from water, acid, grit, and fibrous or other foreign matters likely to clog or injure the burner or valves. Grades 5 and 6 shall be hydrocarbon oils, free from grit, acid, and fibrous or other foreign matters likely to clog or injure the burner or valves. If required, it shall be strained by being drawn through filters or wire gauze of 16 meshes to the inch. The clearance area through the strainers shall be at least twice the area of the suction pipe and the strainers shall be in duplicate.

METHODS OF TEST

Flash Point

3.—Minimum—The flash point, instrument and method for determining minimum flash point shall be that legal for the locality in which the oil is sold. In absence of legal requirements, the minimum flash point shall be determined in accordance with the Standard Method of Test for Flash Point by means of the Pensky-Martens Closed Tester as in A.S.T.M. D 93-22, or Method 110.22 Bureau of Mines, Technical Paper 323 B.

Maximum—Standard Method of Test for Flash Point by means of the Pensky-Martens Closed Tester as in A.S.T.M. D 93-22 or Method 110.22, Bureau of Mines, Technical Paper 323 B.

4.—Standard method of test for Flash Point by means of Pensky-Martens Closed Tester as in A.S.T.M. D 93-22, or Method 110.22 Bureau of Mines, Technical Paper 323 B.

Water and Sediment

5.—Standard method of test for water and sediment in petroleum products by means of centrifuge as described under Method 300.31 in Bureau of Mines Technical Paper 323 B for United States Federal Specification bunker fuel oil "B," or A.S.T.M. D 96-28.

6.—Standard method of test for water and sediment in petroleum products by means of distillation and extraction as described under methods 300.12 for water and 300.2 for sediment in Bureau of Mines Technical Paper 323 B for United States Federal Specification bunker fuel oil "C." A deduction in quantity will be made for all water plus sediment.

7.—Tentative method of test for pour points of petroleum products as in A.S.T.M. D 97-28 or Method 20.12 in Bureau of Mines, Technical Paper 323 B.

Distillation Test

8.—Standard method of test for distillation of gasoline, naphtha, kerosene and similar petroleum products as in A.S.T.M. D 86-27.

9.—Standard method of testing gas lubricants as in A.S.T.M. D 88-26 cept as to the procedure in taking readings which shall be taken as required in these specifications.

Viscosity

10.—Standard method of test for viscosity of petroleum products and lubricants as in A. S. T. M. D 88-26 and Method 30.41, Bureau of Mines, Technical Paper 323 B.

11.—Complete information regarding the procedure for making the test specified is to be found in the

Table I

Detailed Requirements for Domestic Fuel Oils

Grade of Oil	Flash Point		Water and Sediment	*Pour Point	Distillation Test		Viscosity
	Min.	Max.	Max.	Max.			Max.
No. 1 Light Domestic Fuel Oil					10% Point Maximum	End Point Maximum	
A light distillate oil for use in burners requiring a high grade fuel.	110°F. or legal	165°F.	0.05%	15°F.	420°F.	600°F.	
No. 2 Medium Domestic Fuel Oil					10% Point Maximum	90% Point Maximum	
A medium distillate oil for use in burners requiring a high grade fuel.	125°F. or legal	190°F.	0.05%	15°F.	440°F.	620°F.	
No. 3 Heavy Domestic Fuel Oil					10% Point Maximum	90% Point Maximum	Saybolt Universal at 100°F.
A distillate fuel oil for use in burners where a low viscosity oil is required.	150°F. or legal	200°F.	0.1%	15°F.	460°F.	675°F.	55 Seconds

*Note:—Lower or higher pour points may be specified whenever required by conditions of storage and use. However, these specifications shall not require a pour point less than 0°F. under any conditions.

Table II

Detailed Requirements for Industrial Fuel Oils

Grade of Oil	Flash Point Min.	Flash Point Max.	Water and Sediment Maximum	Pour Point Maximum	Viscosity Maximum
No. 4 Light Industrial Fuel Oil					Saybolt Universal at 100°F.
An oil known to the trade as a light fuel oil for use in burners where a low viscosity industrial fuel oil is required.	150°F.	See Note*	1.0%	See Note**	125 Seconds
No. 5 Medium Industrial Fuel Oil					Saybolt Furol at 122°F.
Same as Federal Specifications Board Specification for Bunker Oil "B" for burners adapted to the use of industrial fuel oil of medium viscosity.	150°F.		1.0%		100 Seconds
No. 6 Heavy Industrial Fuel Oil			Water Sediment		Saybolt Furol at 122°F.
Same as Federal Specifications Board Specifications for Bunker Oil "C" for burners adapted to oil of high viscosity.	150°F.		1.75%	0.25%	300 Seconds

Note: *Whenever required, as for example in burners with automatic ignition, a maximum flash point may be specified. However, these specifications shall not require a flash point less than 250°F. under any conditions.
**Pour point may be specified whenever required by conditions of storage and use. However, these specifications shall not require a pour point less than 15°F. under any conditions.

publications of the American Society for Testing Materials, 1315 Spruce street, Philadelphia, or in the U. S. Bureau of Mines, Technical Paper 323 B, obtainable at the Office of the Superintendents of Documents, Government Printing Office, Washington, D. C. The price is 15 cents.

SIGNIFICANCE OF TEST PRESCRIBED

Flash Point

12.—The flash point of a product may be defined as the temperature to which it must be heated in order to give off sufficient vapor to form an inflammable mixture with air. This temperature varies with the apparatus and procedure employed and consequently both must be specified when the flash point of an oil is stated.

13.—The minimum flash point of oils used for fuel is usually controlled by law. When there are no legal requirements, the minimum values in the table are to be employed. Maximum values are specified in oils Nos. 1, 2, and 3 to insure the required ease of ignition.

Water and Sediment

14.—Water and sediment are impurities which are almost entirely excluded in oils Nos. 1, 2, and 3 and which are permitted in somewhat larger quantities in oils Nos. 4, 5, and 6. It is difficult to eliminate them entirely from this latter group of oils, and the advantage is not sufficient to justify the cost.

15.—Water and sediment are determined together by the centrifuge, except with oil No. 6, where water is determined by a distillation method, and sediment by extraction with benzol.

Pour Point

16.—The "pour point" of an oil is the lowest temperature at which an oil will flow under prescribed conditions. Pour point specifications are included in order that oil may be secured which will not cause difficulty in handling or in use at the lowest temperatures to which it may normally be subjected.

Distillation

17.—Laboratory distillation of a sample under prescribed conditions gives an index of the volatility of the oil. The 10 per cent and 90 per cent points represent respectively the temperatures at which 10 per cent and 90 per cent of the sample are distilled over. The end-point is the maximum temperature recorded by the distillation thermometer at the end of the distillation.

18.—The 10 per cent serves as an index of the ease of ignition of the oil and the 90 per cent point and the end point are specified to make sure that the oil will burn completely and produce a minimum amount of carbon.

Viscosity

19.—The viscosity of an oil is the measure of its resistance to flow. Maximum limits are placed on this property because of its effect upon the rate which oil will flow through pipelines and upon the degree of atomization that may be secured in any given equipment.

20.—Viscosity is measured as the seconds required for a definite volume of oil to pass through a small tube of specified dimensions at a definite temperature. Viscosity decreases rapidly as temperature increases, and preheating makes possible the use of oils of relatively high viscosity at normal temperatures. The Saybolt Universal Viscosimeter is used for fuel oils of fairly low viscosity and the Saybolt Furol Viscosimeter for heavier oils.

S. R. Scivally, in charge of tank car sales for the Transcontinental Oil Co. at Fort Worth, was for years connected with the Union Petroleum Co., and later the Sinclair Refining Co., at Tulsa. He has been located at Fort Worth since his transfer from Tulsa by the Transcontinental several years ago

New Distributing Company Formed in New York

NEW YORK, Nov. 1.—Samuel Margolas, former owner of the Utility Oil Co., has organized the First National Petroleum Corp., through which petroleum products will be distributed in New York City. Public announcement of the company's formation was not made until Friday although it was known several weeks ago organization was taking place.

Associated with Mr. Margolas are two of the former members of the Utility Oil Co., W. H. Lyons and A. Broder, the former vice president and the latter secretary of the new company. Mr. Margolas is president. Headquarters are in the Bank of Manhattan Bldg., Long Island City, N. Y.

The Utility Oil Co., was sold by Mr. Margolas to the Warner Quinlan Oil Co., of New York, in April, 1929.

The new company will operate a chain of "super-service stations," throughout the city. Nine stations have been purchased in Queens and also a bulk storage plant and a barge. Ten more stations are to be erected in Manhattan and Brooklyn, at an estimated cost of $800,000, Mr. Margolas said.

Plans for further expansion have been made but they were not announced.

To Escape Winter's Fury

MOTORISTS FLOCK TO WINTER KING

Motorists find real shelter from winter's operating troubles when they use Champlin Winter King Gasoline. Here is a 60-62 gravity motor fuel that, in coldest weather, is quick starting, speedy accelerating, powerful and economical.

Winter King is straight run, refined from high-gravity, paraffin-base, sulphur-free Mid-Continent Crude. Its color is always water white and days in the sunlight will not mar its sparkling whiteness with the faintest tint of yellow.

After successive seasons of widespread demand, this winter will find Champlin Winter King Gasoline enjoying greater and greater sales. Orders are handled promptly. Wire, write or phone the CHAMPLIN REFINING COMPANY, Enid, Oklahoma.

USE CHAMPLIN OILS

CHAMPLIN Winter King GASOLINE

Gasoline Distribution as an Expert On Retailing Sees It

NEW factors for the oil companies to consider in their study of the gasoline station business were brought out in an address by Paul T. Cherington, director of research, of J. Walter Thompson Co., advertising agency, in an address before the Conference on Retail Distribution at Boston early in September.

In his address on "The Place of Market Surveys in Retail Distribution," which is republished in the main herewith, Mr. Cherington took for his illustrations points made from a survey of business at gasoline stations in the U. S. Distribution Census of a year or so ago.

"Each employee averages to get more than the proprietor's net earnings in all but about 90 of the independent gas stations in these nine cities, out of a total of over 2200," is his conclusion from a study of figures for independent stations in 9 cities.

"It seems incredible that, if the significance of this were adequately grasped by the oil companies, they would keep on encouraging the opening up of stations which cannot pay their average employee a living wage, and which cannot yield anything like an adequate return on the necessary investment," he says on the same point.

Paul T. Cherington, director of research, J. Walter Thompson Co.

* * *

BY PAUL T. CHERINGTON

LET us take first the matter of being accessible, or in other words, "location" as a factor in retail market study.

The number of automobiles passing a given point on a road, for instance, may represent the total market for that locality, but it, alone, is not a safe guide to the value of that point as a gas-station location. This number, important as it is, has little significance on which retailing practice can be based until coupled with other specific facts about the location.

Here is a concrete case: Two state highways in a western state cross at a certain place at right angles, and hence, by the traffic laws of the state, (both being arterial roads), all traffic in all directions must stop before making the crossing. There are here 12 separate traffic streams, since each car approaching the intersection from any one of four directions may go in any one of three directions—straight, right turn, or left turn. For one of these 12 streams, each one of the four corners is at the 90-degree right turn, and hence, represents a much higher gas-station value than any of the others for that stream.

The real problem is to find the most important of the traffic streams, or the most important combination of streams accessible to any one corner.

To be of much use in determining location the basic figure for the actual number of cars passing this intersection—equal for all four corners—must be supplemented by these other facts determining which of the corners is most readily accessible to the most car-drivers able, willing and ready to buy, and which of the corners can be best fitted to meet the motorists' convenience, or, in other words, which will be the location representing a maximum of ability, willingness and readiness to sell.

In this case it worked out that property at the near right hand corner —outbound—was the most favorable. This corner was formerly part of an orchard held at about $1250 an acre. The quarter acre at the corner was rented for $100 a month, which, capitalized at 6 per cent, equals $20,000 or, 64 times its value as a fruit orchard.

Moreover, this value is not fictitious, since the present lessees are said to have refused a substantial advance for their lease. This is a much higher price than the other three corners bring because this one has the stoppage in flow, and the right angle turn in its favor at the time of day when traffic is heavy and likely to be in need of gas.

To cite another case, property near a certain city corner has a market value of $350 a front foot for residence or apartment use, while alongside at the favorably located corner, a gas station is said to be earning 10 per cent net on a valuation of $2500 per front foot. The present holders of the lease value this corner for this purpose at six times the value of adjoining frontage in ordinary use. In each of these cases, the high earning power of the site is due, not only to the volume of traffic, but also to the facts that here the traffic is checked, and that the contours and construction make it simple to leave there and get back into the traffic stream.

In both of these cases, the facts about consumers who were able, willing and ready to buy has to be considered in connection with detailed facts of location before their real significance could be determined.

Personnel as a Market Factor

So much for the location factor as an element in retail market studies. In a kindred fashion such studies are modified directly and vitally by the personnel problems and the wage problems of the retailer.

Market facts may have one meaning to the chain store operator with a hundred young managers and helpers to pay, and quite another to the small independent retailer whose head clerk has grown up in his business. Competence in retailing is largely a matter of getting suitable help, and then doing enough business to cover the necessary costs at a price. Hence, retailers' personnel problems are quickly reflected in price and sales.

These problems of personnel ought not to be confused with the profit problems, although they sometimes appear to run together, especially when profits are in danger of being exceeded by clerk hire. Workers in most of the crafts and trades have been able to get increased wages during recent years, and retail clerks, in a measure, have kept pace. The large store, or the chains of stores, by virtue of their lower volume of business, are more nearly free from the danger in which many small independent retailers find themselves of having their earning, in the form of net profits, drop below what they must pay for the hire of a first-class clerk.

If a chain store corporation's net earnings per store fall below the wages of store managers nobody feels sympathy except the shareholders. But if a store-owner pays his clerk more than his own net profits are, we all feel sorry for him; we pour out much sympathetic ink over the hard lot of the poor independent merchant, although we may continue to take our custom to the store where prices are lower.

The gasoline market (to return to our former illustration) may not be greatly concerned about the number of employees per gasoline station, or the total wages paid to them; but almost any figures concerning the total consumption of gasoline, or even the figures for car registrations, gain new meaning in the light of the following table for the independent gas and oil stations in 9 out of the 11 cities covered by the Distribution Census:

No. of stations	Volume of sales	Total Amt. wages divided by total No. of employees	Earning per station at 2½% net sales total	Per cent of total sales
722	Less than 5,000	$ 933	$ 60	4.8
489	5,000- 9,999	1,246	174	9.4
649	10,000- 24,999	1,565	393	28.6
275	25,000- 49,999	1,536	839	25.0
71	50,000- 99,999	1,558	1,604	12.6
14	100,000-249,999	1,800	3,472	5.5
3	250,000-499,999	1,189	8,627	2.8
4	500,000-999,999	2,120	25,753	11.3
				100.00

Figuring the net profits at 2½ per cent of total sales, it is noteworthy that the proprietor's earnings per station per year do not equal the yearly wages per employee until the group doing over $50,000 business a year is reached. These smaller stations doing over two-thirds of the total business have net earnings less than the average amount of wages per employee, including unskilled helpers. For all these stations below the $50,000 line the average earnings of salaried and waged helpers was nearly five times the proprietor's net earnings ($1,489 against $307).

Each employee averages to get more than the proprietor's net earnings in all but about 90 of the independent gas stations in these nine cities out of a total of over 2200. This is a fact which ought to be in mind when considering any market analysis for gas and oil stations. It is part of the price being paid by the public for accessibility and convenience, and in the long run it will get what it pays for or abandon those who promise and fail to deliver.

It seems incredible that, if the significance of this were adequately grasped by the oil companies, they would keep on encouraging the opening up of stations which cannot pay their average employee a living wage, and which cannot yield anything like an adequate return on the necessary investment.

And the gas station business is not an isolated exception. All trades have been paying an increasing price for sales-help, as well as for accessibility, and most of them have lost sight of the relation of these costs to the consumer's price.

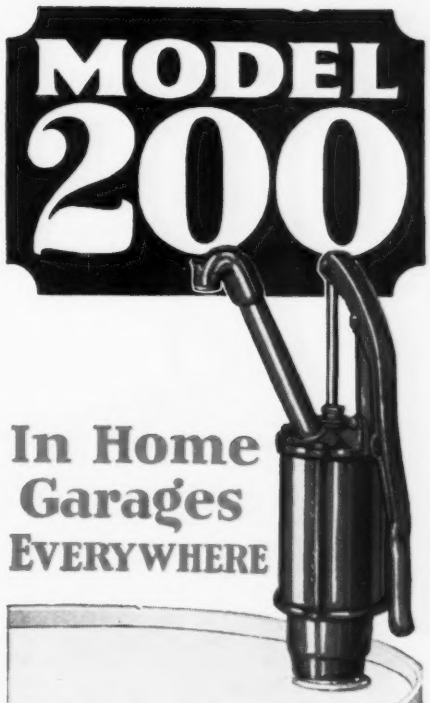
Profits as a Market Factor

It is difficult for any retail business to count consistently on more than about 2½ per cent net profit. Of course, some items and some businesses yield more; but usually some actual or potential competitor is waiting around the corner to do business at this rate. This means that unless a retail establishment can sell more than fifty thousand dollars worth of goods in a year, its proprietor cannot count on a weekly net profit of over $24. This is less than the market price for good brains of the type necessary for running a fair sized store.

To apply this idea concretely, suppose we turn again to the gas station business. The retail distribution census gives us the following figures for all of the eleven cities covered:

	Total number	Total sales	Percentages of Total number	Percentages of Total sales
Total	4,135	$137,352,300	100.0	100.0
Chain	1,920	100,895,400	46.4	73.5
Independent	2,215	36,456,900	53.6	26.5
Independent under $5,000 annual sales	718	1,758,800	32.42	4.82
Independent under $50,000 annual sales	2,121	24,547,600	95.75	67.33
Independent over $50,000 annual sales	94	11,909,300	4.25	32.67

From this it will be observed that over 48 per cent of the gasoline and oil stations doing 75.5 per cent of the total business in these eleven cities belonged to chain companies, as distinct from individual enterprises.



In Home Garages EVERYWHERE

This new Model 200 has popularized the "continuous use oil test" in countless home garages—selling more oil, winning more friends and making new, steady customers for lube-oil marketers.

Replaces Leaky Faucets

Model 200 dispenses oil from the drum in an upright position, in a strong, unbroken stream and cuts off oil flow cleanly. No more fuss with leaky faucets. No more waste oil.

All Metal---Fits All Drum Depths and Various Size Openings

Model 200 is all-metal and so well built that it is capable of handling kerosene, gasoline, alcohol, etc., as well as motor oils. It fits 1½-inch to 2-inch drum openings and has adjustable sliding intake for draining 15 to 16 gallon capacity drums. Handle is malleable and arranged for locking. Heavy one-piece construction, and heavy cast head.

Write for Sales Plans and Bulletins!

Bennett Pumps Corp., Muskegon, Mich.; Service Station Equipment Co., Toronto and Winnipeg; Republic Steel Package Co., Richmond, Calif.; Bennett Export Corp., 32 Broadway, New York.

Bennett Pumps Corporation
QUALITY BUILT
Bennett
Dispensing Equipment
FOR OIL MARKETERS
Muskegon, Michigan.

Move Ahead Into Real Money!

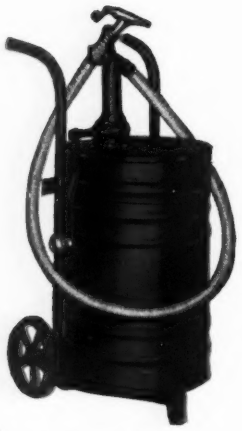
The experience of thousands of prosperous and profitable stations throughout the country shows that service is the master key to successful operation.

And modern, efficient equipment is the first requirement for rendering the service which brings business---permanent, profitable, increasing business.

No. 600
OVAL GREASE UNIT

To neglect equipment, to try to get along with that which is dingy, dirty, slow, wasteful and inefficient can mean only one thing: Red figures on your books---a dying business. Sad, but true!

The normal winter rush is now at hand. Invest now in snappy, speedy equipment and watch the increased profits. Build bigger, more permanent, more profitable trade and cut the overhead of operation at the same time.



No. 100 Complete
GREASE UNIT

Are you going ahead in 1930 or falling back? New equipment is the answer to this.

UNIVERSAL PUMP & TANK CORPORATION
3860 East 91st Street, Cleveland, Ohio
Telephone: Broadway 2900

OIL PRICE HANDBOOKS

HAVE you a complete record of REFINERY prices; TANK WAGON markets; EXPORT prices; CRUDE prices—
For quick reference and comparison with today's prices?

The OIL PRICE HANDBOOK is the only complete record of oil markets for a whole year, compiled in one handy volume for quick reference. Cloth bound—marginal index—9″ x 6″—146 pages.

Oil Price Handbook for 1928.....$5
" " " for 1927.....$5
" " " for 1926.....$5
" " " for 1925 } $6
" " " for 1924 }

Send for these OIL PRICE HANDBOOKS *now*, before they are all gone.

National Petroleum News, 735 Penton Bldg., Cleveland, Ohio

Of the independent stores (which were about one-half of the total number, and did only a little over one-quarter of the total business), most were of small size. About one-third did less than $5000 worth of business a year (their aggregate business being somewhat less than 5 per cent of the total value of the business done).

These stations, obviously, could not have been paying to anyone a living wage in net profits. If anybody made a living out of them it came out of the wage item in the cost of doing business.

Over 2100 of the independent gasoline stations (representing over 95 per cent of the total number) did less than $50,000 worth of business a year and these, in the aggregate, contributed about two-thirds of the total gasoline and oil station business. These, at the net profit rate of 2½ per cent were earning less than $24 a week.

Reaching Out for Profitable Line

Ability to sell at a profit those items which will be bought by those consumers who can be reached is the measure of the skill of the retailer. But one of the best evidences of the increasing difficulty involved in doing this is the reaching out of merchants into strangely assorted lines in order to build up a profit-yielding total volume.

To return to the gasoline business, compare the following distribution census facts about the number of outlets selling gasoline in 11 cities with any indications of any real need for these outlets ever turned up by any study of the gasoline market in these same places. These figures are for the number of stores of all kinds reporting the sale of gasoline and petroleum products as an appreciable part of their business; but show nothing as to retail volume:

ELEVEN CITIES

Number of Stores Reporting Sale of Gas and Petroleum Products

Automobile accessories	302
Automobiles	205
Bakeries	3
Building Materials	4
Candy and Confectionery	13
Cigar and Tobacco	2
Coal, Wood and Ice	11
Dairy and Poultry Products	5
Department Stores	1
Drug Stores	45
Dry Goods and Notions	2
Electrical Appliances and Supplies	3
Florists	2
Fruit and Vegetables	3
Furniture and Household Goods	4
Gasoline and Oil	4135
General Stores	13
Groceries and Delicatessens	13
Hardware	66
Meat, Poultry and Fish	35
Motorcycle and Bicycle	4
Paint, Varnish and Glass	8
Restaurants	7
Unclassified	1
Total	5578

Of the gas stations over a third, as

we have seen, did less than $100 worth of business a week; and yet here were 1400 other outlets of different sorts, many of which, obviously, were doing only an incidental business in petroleum products.

No market study for gasoline in these cities would be complete unless it recognized the fact that, in these eleven cities, the dispensing of gasoline by those few hundred concerns (not over 500) presumably doing it at a profit, was accompanied by similar efforts on the part of several times as many more merchants of assorted kinds who had broken into the business with only a remote chance for profit from gasoline sales.

Able, Willing and Ready to Sell

Neither chain ownership nor independence, large size nor small size, specialization nor departmentalization alone embodies the fundamental principle necessary for meeting all market needs. That is a matter of being able, willing and ready to sell what the market is able, willing and ready to buy. The real decision comes from the consumer; responsiveness to it is the measure of the merchant's skill and his only chance to remain in business.

But in dealing with market studies and market problems it is necessary to recognize the existence of a large number of parasitic outlets, doing a small share of the total business, in competition with those merchants who plan to make a living from their stores.

The manufacturer presumably turns out the best product he can make for the price he charges. The retailer presumably buys as wisely as possible and presents his selections in the most attractive form he can devise. But the consumer buys with undivided attention to his own interests. The manufacturer is not the consumer's producing agent, nor is the merchant his buying agent. Both are offering him goods on a profit-yielding price basis and he knows it. He chooses in his own interest as best as he can. Both the manufacturer and the merchant find it good business to please and satisfy the public, but when they manufacture at a profit, and sell to the consumer at a profit, they both cut themselves off from any right to serve as the consumer's agents.

In any retail market study, the facts about the market need to be placed, for proper interpretation, alongside the facts about the merchant and his ability to meet the market's needs. Out of the relations between the two, and not from either separately, will come the truth.

WASHINGTON—A pipe line on the breakwater at Las Palmas, Canary Islands, will be constructed by an American oil company for the transportation of gasoline and kerosene.

Lazy Bench

The question as to who caused the overproduction of oil of recent years has been argued at length. No one seems to have had the answer until recently, when the following was submitted to the Tulsa Geological Society by Harold S. Thomas, micropaleontologist of the Tidal Oil Co. Blame for all the troubles of the industry is placed where it belongs, and if there are any companies omitted in the poetic effusion, it is due rather to lack of space than to their innocence.

Who Caused The Overproduction?

By Harold S. Thomas, Micropaleontologist, Tidal Oil Co.

Because of this I *know* I know
Who caused the oil to gush and flow,
Who made the grease to spray and spout;
Now this is how it came about:
Silurian times had hardly quit,
When Devonian fish began to flit
Across the Atlantic's coral strands,
And Tidal waves beat back the Sands.
A Red Bank lined the ocean's shore,
Where stood a lonely sycamore;
A Prairie stretched beneath the Sun,
A Texas summer just begun.
The Dixie showers had made roads Slick;
A Gypsy band had stopped to pick
Magnolia flowers on an estate
Where they were wont to propagate.
The Gardner then a Garland made
For wedding party on parade;
For Josey was McMann's (Mc) Bride,
The Hope of Empire by his side.
A Pure oil man (if such there be),
With dreams of dough from royalty,
An Independent little cuss,
Began to fume, began to fuss.
I Amerada head of whom
You hope to make the lawful groom;
I am her beau, he is a sham,
But take her, I don't give a—Continental.
A year speeds past; the bride, 'tis said,
Roxana in her trundle bed;
A year at that Savoy hotel,
And Ann is nothing but a Shell.
"How Skelly know yust what to do?
Transcontinental roads are few,
And Reiter-Foster and I. T. I.
Have found a crop and mapped a high.
"Now Standard tools will Pierce the soil,
In Noble effort to locate oil;
We need not fear a drilling war,
If methods are Superior.
"So do not Waite," said Ole-an;
They spudded in, the war began.
Sinclair, Twin State, Mid-Continent,
And Shaffer, too, drilled down hellbent.
We may, with all our scouting dope
And Collins' inspiration, hope
To end such wars, establish peace,
And dam this flood of oil and grease.

En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio

Light Weight Folio

Folio and Inner Case Only
$10.10

No. 369—A compact outfit. Folio made from heavy 5-oz. smooth black cowhide, with 5½-inch over-all expansion and three inner pockets. Inner case contains six 4-oz. bottles, displayed on a background of red velvet. Each bottle is partitioned separately. Case also contains five grease jars.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, KANSAS CITY, MO.

From the Oil Well to the Jobber

This is Chapter Six of the Story of My Life and Travels.

ABSOLUTELY CONTROLLED

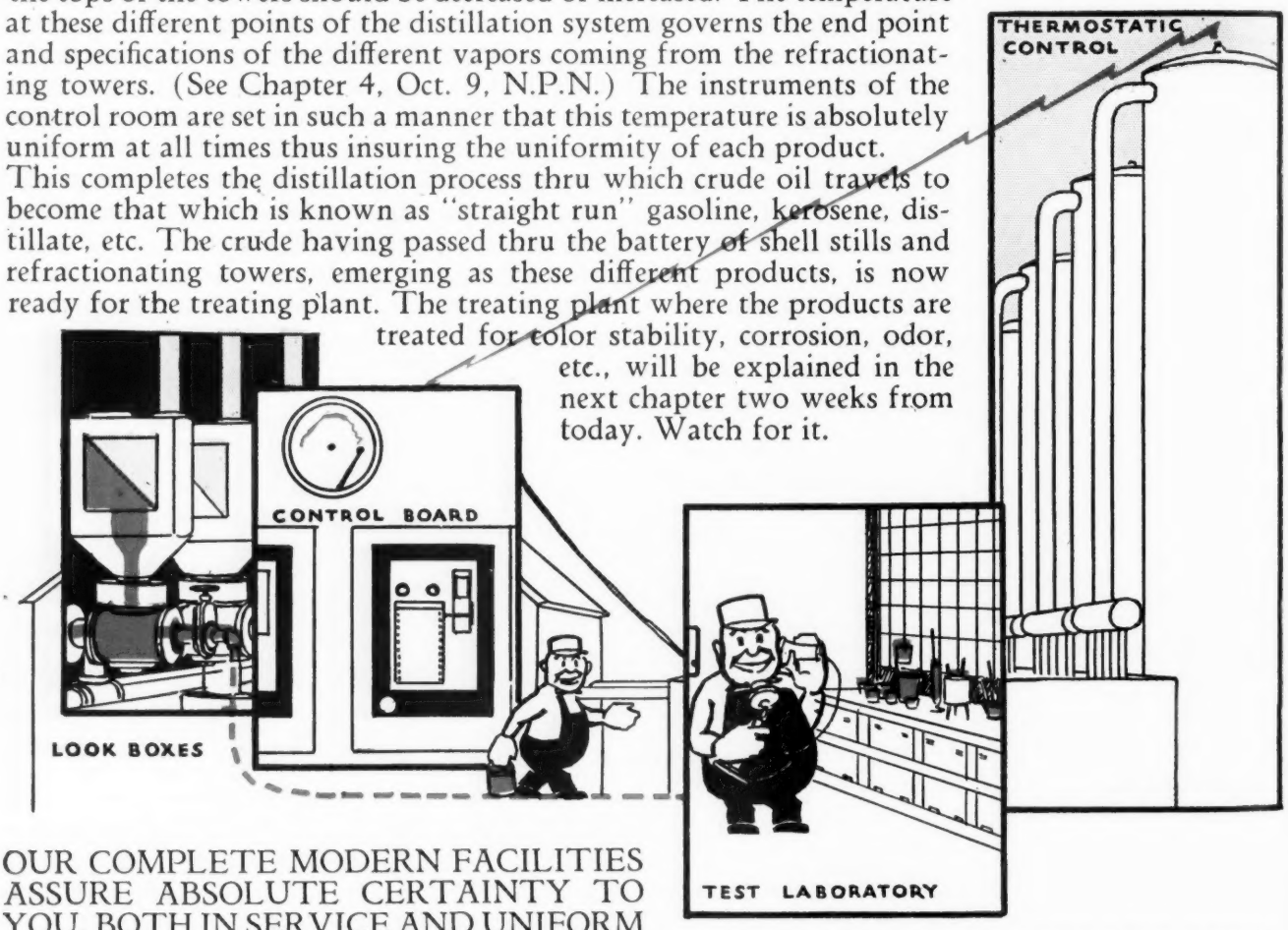
As I promised in my last chapter, (Chapter 5, Oct. 23, N.P.N.) I'm going to explain the purpose of the control room (commonly known as the 'tail' house) thru which I am passing from the condensing coils to the storage tanks.

As my different products, gasoline, kerosene, distillate, etc., condensed from vapors enter this room they must pass thru "look" boxes. Here they are under constant observation and samples of each are taken at regular intervals.

The samples of each must go to the laboratory for analysis where they are carefully checked to insure certainty and uniformity of quality and specifications. The results of these laboratory tests are phoned back to the control room where absolute, precise instruments govern the certainty of the heat at the tops of the refractionating towers and under each shell still.

The tests of these different products show whether or not the temperature under the stills, or in the tops of the towers should be decreased or increased. The temperature at these different points of the distillation system governs the end point and specifications of the different vapors coming from the refractionating towers. (See Chapter 4, Oct. 9, N.P.N.) The instruments of the control room are set in such a manner that this temperature is absolutely uniform at all times thus insuring the uniformity of each product.

This completes the distillation process thru which crude oil travels to become that which is known as "straight run" gasoline, kerosene, distillate, etc. The crude having passed thru the battery of shell stills and refractionating towers, emerging as these different products, is now ready for the treating plant. The treating plant where the products are treated for color stability, corrosion, odor, etc., will be explained in the next chapter two weeks from today. Watch for it.



OUR COMPLETE MODERN FACILITIES ASSURE ABSOLUTE CERTAINTY TO YOU, BOTH IN SERVICE AND UNIFORM QUALITY AT ALL TIMES. YOU CAN ALWAYS BUY FROM EL DORADO WITH COMPLETE CONFIDENCE. ORDER THAT TRIAL CAR TODAY.

THE · EL · DORADO · REFINING · CO.

ESTABLISHED 1916

· EL · DORADO, · KANSAS ·

JUST CALL L.D. 11

Vacuum Distillation

(*Continued from Page* 32)

However, there is another side to the picture and that is that the factor of improving quality and disregarding yields is most appealing to all of us and in reality vacuum distillation may bring us to such high standards of viscosity, boiling ranges and flash characteristics that our yields from black grade crude will be less than by the present system. If this should be the trend, with our ever increasing demand for lube oils of higher viscosity units, we may have to run a greatly increased amount of crude in order to get the fractions required for lubricating stocks, and discard the light ends for cracking materials.

Another trend will be to make new surveys and evaluations of various crudes from different sections of the country and process them by this new method and find what special fractions may be had for lubes by utilizing these modern units.

With vacuum distillation coupled with fractionation equipment applied to Gulf Coastal crudes an entirely new source of lubes of new and surprising characteristics are found. The same is true of West Texas and Mid-Continent crudes.

Over all I think the various processes and phases of our lube industry has been more conservative about making changes in methods, equipment and process than has the light oil end of the industry.

DUE to Tuesday being election day, American Petroleum Institute offices in New York were closed and no crude production nor refinery operation statistics for the week ended Nov. 2 were compiled nor available for publication in this issue.

Western Refiners Plan To Advertise Lubes

TULSA, Nov. 2.—Tentative plans for the formation of a corporation to advertise oils made from Mid-Continent paraffin base crudes were made at a meeting of several refiners and representatives of a Dallas advertising agency here October 30. The advertising agency is Tracy-Locke-Dawson of Dallas.

A committee composed of J. C. Denton of the Mid-Continent Petroleum Corp., Tulsa; W. W. Bruce of the Continental Oil Co., Ponca City; W. G. Skelly of the Skelly Oil Co., Tulsa; R. R. Irwin of the White Eagle Oil & Refining Co., Kansas City, and L. B. McCammon of Transcontinental Oil Co., Tulsa, was appointed to perfect the organization of the corporation.

The name of the proposed corporation will be the Paraffin Base Oil Institute, Inc. It will be operative for a period of three years, according to plans outlined at the first meeting, and will be a non-profit sharing organization. An executive committee of five members will handle the affairs of the corporation, in conjunction with a managing director.

This organization, it was said, was in no way connected with the advertising campaign the Western Petroleum Refiners Association has contemplated, although a majority of the refiners to be solicited for membership in the corporation are members of the W. P. R. A.

The committee named above probably will meet in Tulsa sometime next week.

Correction

An unfortunate printing error was made on Page 178 of the Oct. 30 issue in an article by F. G. Sherbondy, treasurer of the Biggs Boiler Works, Akron, Ohio.

In discussing the reliability of welds in pressure vessels Mr. Sherbondy said: "We found that welds made in pressure vessels under the procedure control established by our engineers and laboratory men could be relied on in every case to be as strong as the original plate. The elongation of the weld under a free bending test could be relied on to be not less than 25 per cent."

As printed part of the paragraph was left out making it appear that the welds could be relied on only 25 per cent.

Gasoline Consumption Up 16.4% in 39 States

	Month of			8 Months Ending With		
	July 1929 Gallons	Aug. 1929 Gallons	Aug. 1928 Gallons	% Change over August, 1928	Aug. 1929 Gallons	Aug. 1928 Gallons	% Change over 1928
Alabama	16,702,000	17,634,000	15,153,000	+16.37	124,659,000	110,077,000	+13.25
Arizona	5,285,000	5,262,000	4,169,000	+26.22	40,594,000	32,059,000	+26.62
Arkansas	13,742,000	15,012,000	8,482,000	+76.99	86,188,000	71,988,000	+19.73
Colorado	15,850,000	18,472,000	17,068,000	+ 8.23	106,847,000	97,922,000	+ 9.11
Delaware	3,602,000	3,782,000	2,289,000	+65.22	21,420,000	17,518,000	+22.27
District of Columbia	6,596,000	6,641,000	5,663,000	+17.27	47,255,000	41,441,000	+14.03
Florida	15,468,000	16,585,000	16,170,000	+ 2.57	152,478,000	155,400,000	— 1.88
Georgia	20,280,000	25,699,000	18,227,000	+40.99	147,435,000	134,527,000	+ 9.59
Idaho	6,046,000	6,992,000	6,294,000	+11.09	34,120,000	32,196,000	+ 5.98
Indiana	41,606,000	46,323,000	39,694,000	+16.70	287,911,000	254,070,000	+13.32
Iowa	32,804,000	38,724,000	32,838,000	+17.92	216,678,000	204,390,000	+ 6.01
Kansas	48,683,000	40,118,000	38,040,000	+ 5.46	246,274,000	215,016,000	+14.54
Kentucky	16,012,000	16,783,000	14,629,000	+14.72	100,678,000	86,534,000	+16.34
Louisiana	15,823,000	17,031,000	14,975,000	+13.73	112,907,000	107,741,000	+ 4.79
Maine	12,515,000	14,202,000	11,762,000	+20.74	61,048,000	52,478,000	+16.33
Michigan	81,012,000	86,125,000	73,579,000	+17.05	520,651,000	431,278,000	+20.72
Minnesota	38,572,000	43,708,000	38,236,000	+14.31	234,785,000	216,017,000	+ 8.69
Missouri	37,366,000	41,186,000	35,487,000	+16.06	252,543,000	233,540,000	+ 8.14
Nebraska	21,089,000	23,690,000	22,393,000	+ 5.79	145,579,000	135,993,000	+ 7.05
Nevada	1,931,000	1,909,000	1,577,000	+21.05	11,411,000	9,462,000	+20.60
New Hampshire	7,459,000	8,301,000	6,658,000	+24.68	37,715,000	30,865,000	+22.19
New Jersey	52,825,000	54,037,000	43,671,000	+23.74	331,803,000	276,894,000	+19.83
New Mexico	4,370,000	4,797,000	3,604,000	+33.10	31,484,000	23,645,000	+33.15
North Carolina	21,937,000	21,611,000	21,844,000	— 1.07	165,423,000	157,282,000	+ 5.18
North Dakota	11,374,000	19,436,000	15,672,000	+24.02	87,860,000	73,435,000	+19.64
Ohio	90,968,000	101,008,000	91,733,000	+10.11	628,262,000	560,160,000	+12.16
Oklahoma	31,812,000	30,889,000	27,395,000	+12.75	207,103,000	182,828,000	+13.28
Oregon	17,628,000	18,075,000	16,145,000	+11.95	105,568,000	94,978,000	+11.15
South Carolina	10,700,000	11,595,000	9,309,000	+24.56	77,356,000	70,462,000	+ 9.78
South Dakota	12,367,000	16,159,000	13,972,000	+15.65	84,591,000	74,032,000	+14.26
Tennessee	18,669,000	19,899,000	17,293,000	+15.07	124,818,000	109,901,000	+13.57
Texas	75,330,000	73,608,000	60,809,000	+21.05	503,822,000	430,806,000	+16.95
Utah	6,071,000	6,122,000	4,888,000	+25.25	37,090,000	32,065,000	+15.67
Vermont	5,616,000	6,547,000	5,223,000	+25.35	28,335,000	22,661,000	+25.04
Virginia	20,451,000	22,420,000	18,535,000	+20.96	134,993,000	118,209,000	+14.19
Washington	24,173,000	27,333,000	24,216,000	+12.87	166,765,000	150,345,000	+10.92
West Virginia	13,913,000	13,525,000	12,201,000	+10.85	80,293,000	71,161,000	+12.83
Wisconsin	45,555,000	48,190,000	40,297,000	+19.59	253,588,000	229,492,000	+10.50
Wyoming	4,301,000	4,993,000	4,208,000	+18.65	23,545,000	21,861,000	+ 7.70
Total	926,503,000	994,423,000	854,398,000	+16.39	6,061,875,000	5,370,729,000	+12.87
Daily Average	29,887,000	32,078,000	27,561,000	+16.39	24,946,000	22,011,000	+13.33
Increase over previous year:							
Amount of Increase	.....	140,025,000	.....	.....	691,146,000	.....	.....
Percentage Increase in Daily Average	.....	16.4%	.....	.....	13.3%	.....	.....
Massachusetts	53,003,000	54,399,000	.....	.....	.....	.....	.....

Compilation Of Mid-Continent Refinery Operations

All Rights Reserved to The National Petroleum Publishing Co.

Mid-Continent Refinery Operations Week Ended November 1 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Nov. 1
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	92,000	160,200	86,600	81,500	54,900	475,200
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	53,631 — 9.3	117,081 + 0.4	67,204 + 0.2	40,497 — 15.3	59,788 — 6.9	338,201 — 4.7
Da. Av. Other Oils	9,714 + 3.0	8,899 + 58.9	2,865 + 30.5	2,031 + 19.2	1,322 — 40.5	24,831 + 17.4
GASOLINE—Gallons						
Stocks, Oct. 25	11,897,000	46,905,000	15,229,000	9,504,000	10,621,000	94,156,000
Prod. 10-25 to 11-1	10,408,000 — 2.9	20,115,000 + 10.1	8,090,000 — 6.3	4,326,000 + 2.3	5,798,000 — 1.7	48,737,000 + 2.1
Ship. 10-25 to 11-1	9,731,000 — 1.7	20,260,000 + 2.6	8,790,000 + 5.4	3,053,000 — 1.4	6,449,000 + 8.9	48,283,000 + 2.7
Stocks, Nov. 1	12,574,000 + 5.7	46,760,000 — 0.3	14,529,000 — 4.6	10,777,000 + 13.4	9,970,000 — 6.1	94,610,000 + 0.5
Ratio Sales to Prod.	93.5%	100.7%	108.7%	70.6%	111.4%	99.1%
KEROSENE—Gallons						
Stocks, Oct. 25	9,672,000	6,180,000	2,246,000	28,000	1,082,000	19,208,000
Prod. 10-25 to 11-1	1,878,000	2,329,000 — 12.6	1,494,000 — 14.5	22,000 +175.0	541,000 + 5.7	6,264,000 — 8.0
Ship. 10-25 to 11-1	987,000 + 1.7	1,822,000 — 17.5	1,393,000 + 1.5	22,000 + 22.2	407,000 — 22.6	4,631,000 — 9.0
Stocks, Nov. 1	10,563,000 + 9.2	6,687,000 + 8.2	2,347,000 + 4.5	28,000	1,216,000 + 12.4	20,841,000 + 8.5
Ratio Sales to Prod.	52.6%	78.2%	93.2%	100.0%	75.2%	73.9%
STOVE DISTILLATE—Gallons						
Stocks, Oct. 25	2,675,000	5,947,000	1,533,000	116,000	140,000	10,411,000
Prod. 10-25 to 11-1	484,000 — 31.4	918,000 — 20.7	443,000 + 64.7	112,000 — 0.9	330,000 + 50.0	2,287,000 — 7.3
Ship. 10-25 to 11-1	562,000 — 2.4	954,000 — 8.9	200,000 + 96.0	72,000 — 57.6	183,000 — 21.8	1,971,000 — 7.4
Stocks, Nov. 1	2,597,000 — 2.9	5,911,000 — 0.6	1,776,000 + 15.9	156,000 + 34.5	287,000 +105.0	10,727,000 + 3.0
Ratio Sales to Prod.	116.1%	103.9%	45.1%	64.3%	55.5%	86.2%
GAS OIL—Gallons						
Stocks, Oct. 25	4,518,000	39,637,000	3,221,000	13,916,000	5,331,000	66,623,000
Prod. 10-25 to 11-1	1,204,000 — 22.1	2,782,000 + 57.8	1,926,000 +265.4	813,000 — 9.6	2,092,000 — 3.6	8,817,000 + 27.7
Ship. 10-25 to 11-1	1,498,000 + 9.1	2,910,000 +285.9	2,332,000 + 44.8	790,000 +110.1	2,967,000 + 89.8	10,497,000 + 84.9
Stocks, Nov. 1	4,224,000 — 6.5	39,509,000 — 0.3	2,815,000 — 12.6	13,939,000 + 0.2	4,456,000 — 16.4	64,943,000 — 2.5
Ratio Sales to Prod.	124.4%	104.5%	121.1%	97.2%	141.8%	119.1%
FUEL OIL—Gallons						
Stocks, Oct. 25	14,344,000	43,865,000	66,510,000	30,402,000	21,033,000	176,154,000
Prod. 10-25 to 11-1	3,883,000 — 9.3	7,730,000 — 11.6	7,981,000 — 2.2	5,019,000 — 30.5	5,841,000 — 7.1	30,454,000 —12.2
Ship. 10-25 to 11-1	4,589,000 — 5.9	9,724,000 + 17.1	7,302,000 — 15.7	4,936,000 — 26.2	4,806,000 — 8.2	31,357,000 — 6.8
Stocks, Nov. 1	13,638,000 — 4.9	41,871,000 — 4.5	67,189,000 + 1.0	30,485,000 + 0.3	22,068,000 + 4.9	175,251,000 — 0.5
Ratio Sales to Prod.	118.2%	125.8%	91.5%	98.3%	82.3%	102.9%

Gasoline Produced by Various Methods, Week Ended November 1

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,593,000	63.3%	13,261,000	65.9	5,943,000	73.5	4,022,000	93.0	1,923,000	33.2	31,742,000	65.1
Cracked	3,246,000	31.2	5,290,000	26.3	1,145,000	14.2	109,000	2.5	3,102,000	53.5	12,892,000	26.5
Natural	569,000	5.5	1,564,000	7.8	1,002,000	12.3	195,000	4.5	773,000	13.3	4,103,000	8.4
Total	10,408,000		20,115,000		8,090,000		4,326,000		5,798,000		48,737,000	

+ or — columns are % change over previous week.

Gasoline Stocks Reflect Export Purchases

Staff Special—By Telegraph

TULSA, Nov. 4

EXPORT gasoline buying of late October is reflected in weekly operation reports of 93 Mid-Continent refiners to NATIONAL PETROLEUM NEWS for week ended Nov. 1. Gasoline shipments in Oklahoma, North Texas, and Louisiana-Arkansas, where bulk of export purchases were made, increased from 2 to 6 per cent, and these districts reduced stocks.

Gasoline shipments for entire field increased 1,200,000 gallons with Kansas and West Texas running some gasolines to storage. Crude runs were lower by 16,000 barrels daily average. Gasoline production increased 1,000,000 gallons and shipments and production were almost on a parity. Stocks were increased only 450,000 gallons.

Kerosene and stove distillate stocks

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Nov. 1. Change in stocks figures from Oct. 4.

GASOLINE	Gallons
Production	195,390,000
Shipments	190,262,000
Net change in stocks	+5,128,000
Ratio sales to production	97.3%
KEROSENE	
Production	27,311,000
Shipments	21,335,000
Net change in stocks	+5,976,000
Ratio sales to production	78.1%
STOVE DISTILLATE	
Production	9,118,000
Shipments	7,696,000
Net change in stocks	+1,422,000
Ratio sales to production	84.4%
GAS OIL	
Production	29,824,000
Shipments	28,421,000
Net change in stocks	+1,403,000
Ratio sales to production	95.2%
FUEL OIL	
Production	131,908,000
Shipments	134,332,000
Net change in stocks	—2,424,000
Ratio sales to production	101.8%

were increased, the latter by 1,600,000 gallons due primarily to decrease in shipments. Kerosene stocks were up 300,000 gallons.

Gas and fuel oil stocks were reduced. Gas oil production was almost 2,000,000 gallons higher but shipments increased almost 5,000,000 gallons. Fuel oil production was lower by over 4,000,000 gallons which offset the smaller shipments, and stocks were reduced 900,000 gallons.

Gasoline Demand Lessens In September

WASHINGTON, Nov. 2.—A daily average of 2,909,000 barrels of crude were produced in the country during September, a decline of 68,000 barrels from the record figure established during August. A total of 87,269,000 barrels were produced in September, according to the U. S. Bureau of Mines.

The three leading producing states of California, Texas and Oklahoma, declined in daily average output in September, the decline in Texas being the largest.

Crude stocks east of California totaled 386,662,000 barrels on Sept. 30, a decrease of 15,000 barrels from August stocks. In California stocks were 150,443,000 barrels at the end of September, a gain of nearly 1,650,000 barrels. Total stocks of all oils rose from 672,066,000 barrels to 677,421,000 barrels in September, a new high figure.

Daily average gasoline production was 1,238,000 barrels in September, a slight decline from the record production of August. Total output was 37,152,000 barrels in September.

Gasoline consumption reached the turning point in September, being at the rate of 1,140,000 barrels daily average, as compared with 1,218,000 barrels in August and 992,000 barrels for September, 1928.

Gasoline stocks were lowered in September, standing at 33,222,000 barrels Sept. 30, compared with 33,788,000 barrels Aug. 31.

The largest change in refined products during September was the decrease of 9,000,000 pounds in the production of wax. Output was 44,513,000 pounds, compared with 53,377,000 pounds in August.

Of outstanding interest among other refined products were large decreases in exports of kerosene, fuel oil and lubricants, a gain of 10 per cent over August in domestic demand for kerosene, and a decline of 7,000,000 pounds in stocks of wax.

Daily average runs to stills of domestic crude oil reached a new peak in September, but daily runs of foreign crude continued to decline and fell below 200,000 barrels for the first time since April, 1928. Total runs to stills were 84,099,000 barrels, a decline of 2,700,000 barrels from August runs.

FACTS

SERIES No. 7

WHAT do you get from the average Winter Motor Oil which has a 15 to 20 below zero cold test?

A fine oil for low speeds, of course, but an oil which has a viscosity of only 39 to 40 at 210° F.

The new GREEN GOLD SUB-ZERO MOTOR OIL is as remarkable as it is amazing. Here is a refining development which has surprised the industry—the only oil with a 15 to 20 below zero cold test which possesses a viscosity of 57 at 210° F.

There are many below zero cold test oils. There are many oils with a viscosity of 57 to 73 at 210° F.

But GREEN GOLD is the only motor oil you can buy which has the combination of 15 to 20 below zero cold test coupled with high viscosity at high temperatures.

GREEN GOLD not only gives to the motorist easy starting and sure lubrication on cold mornings—but it is an oil which stands up under hard fast driving.

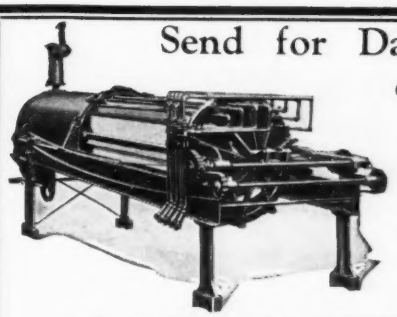
Write or wire for samples and exclusive sales rights in your territory.

THE WARREN REFINING & CHEMICAL CO.
Cleveland, Ohio

For twenty-five years a leader in lubricating specialties

* Also made in a heavier grade with a viscosity of 73 to 75 at 210° F. and 10° below zero cold test.

Send for Data on Filtering Residuum



FILTRATION of pressure still residuum pays.

It pays in the form of a clean, marketable product, prepared at the cost of only a few cents a barrel.

Send for further data.

OLIVER UNITED FILTERS, Inc.

SAN FRANCISCO, Fed. Reserve Bank Bldg. NEW YORK, 33 West 42nd St.
CHICAGO, 565 W. Washington Blvd. LONDON, W. C. 1, 150 Southampton Row
PARIS, 63 Ave. des Champs Elysees.

NATIONAL ADVERTISING

makes NEW NEIGHBORS *feel* FRIENDLY *toward you*

It's a great feeling . . . when you're traveling in a foreign country where nobody knows you or talks your language, to meet an old familiar face from the old home town!

And that's the kind of feeling that comes to a stranger when he sees a dealer selling and displaying an old familiar product that was advertised and sold in his old home town.

Newcomers in any community become customers of the dealer who carries *nationally advertised oil*—they may not know the dealer but they *know* the motor oil—they have confidence in it—they have friendship for it. National advertising for a product brings new business to the dealer who carries it.

SINCLAIR REFINING COMPANY, INC.
45 NASSAU STREET · · · NEW YORK
Atlanta · *Boston* · *Chicago* · *Houston* · *Kansas City*

SINCLAIR OPALINE

REG. U.S. PAT. OFF.

is NATIONALLY ADVERTISED AS THE *Extra Service* MOTOR OIL

Export Buying Tends to Stabilize Mid-Continent Gasoline

Staff Special
TULSA, Nov. 2

THE Mid-Continent gasoline market reached a more stable basis the last week of October than for some time. Several refiners lowered quotations 0.25 cent, while others advanced their low prices about the same amount and the price range accordingly was shortened. Export buying of the previous week contributed largely to this situation. Gasoline demand from jobbers was fair although buying was strictly on a hand-to-mouth basis.

Natural gasolines were comparatively active, both for spot and over-the-month delivery. No large orders were reported.

Kerosene demand was extremely light, with the exception of a million gallons bought in Louisiana for export shipment.

Distillates and gas oil were more freely offered. Fuel oils were steady. Neutrals and bright stocks were in better demand. Wax prices were fractionally higher with buying more active.

Gasolines

The wide price range for gasolines which had existed for several weeks disappeared Oct. 29 when several Oklahoma refiners lowered their spot quotations for 58-60 U. S. Motor from 7.75 to 7.50 cents. Other grades of gasolines also were lowered. At the same time the minimum prices moved upward slightly from the previous week's levels. The spread between prices in the Mid-Continent generally by Nov. 1 was 0.50 cent a gallon.

Bulk of 58-60 U. S. Motor moved to jobbers from Oklahoma plants at 7 to 7.50 cents. Considerable competition was experienced from marketers who had bought 58-60, 437 e.p. goods a week previous at 6.625 to 6.875 cents a gallon.

A number of north and west Texas refiners reported a decided improvement in the general situation. Following the heavy export buying of the previous week, prices on all grades started upward but a few sellers who had a surplus of lower gravity goods made no change in quotations. Only within the past week were the bulk of these lower priced goods removed from the market. A minimum price of 7 cents was reached on full specification 58-60 U. S. Motor the last two or three days of the month.

Competition from outside sources was light in Arkansas and Louisiana markets, several refiners reported. With the competitive refiners quoting a minimum of 7 cents on 58-60 U. S. Motor, Arkansas and Louisiana refiners moved goods into differential territories 0.125 cent above last week's quotations.

Little change appeared in Kansas gasolines. Refiners continued to quote 58-60 U. S. Motor at 7.50 to 7.75 cents. Advantage was taken of the more stable situation in Oklahoma to quote slightly better prices for Group 3 shipment.

Domestic demand for the higher gravity gasolines improved in one or two districts. Buyers reported finding these goods scarce in north Texas for prompt shipment.

The buyer referred to last week as seeking 64-66, 375 e.p. gasoline for export was reported still inquiring for the goods to complete a cargo, but was experiencing considerable difficulty in placing orders.

Natural Gasolines

Demand for natural gasolines was not as active. No large orders were placed for spot shipment but scattered purchases throughout the week helped to keep the market clear of distress goods.

One large refiner placed an order through its Tulsa branch for approximately 65 cars of grade BB. One of the large export buyers who placed a substantial part of the export orders for refined gasolines last week, was reported inquiring for a quantity of goods. A number of orders for shipment over first half of November were reported.

Cooler weather caused more of the goods to run to the lower grades with a consequent lowering of production of the higher grades, two or three manufacturers reported.

Kerosenes

Demand for kerosenes from domestic users was light. Many refiners who have been anticipating a heavy demand for distillates were reducing kerosene cuts and producing more distillate.

Two buyers were reported in Louisiana markets the first of the week for 3,000,000 gallons of 44 gravity kerosene. On Oct. 30 approximately 1,000,000 gallons of this grade was bought by one of the buyers for export. Purchase price was about in line with present levels. Goods were to be shipped over the balance of the year.

No goods were reported placed by the other buyer prior to close of business Nov. 2.

All indications showed that one or two refiners in Louisiana were preparing to turn out larger quantities of this gravity kerosene.

Distillates, Fuel and Gas Oils

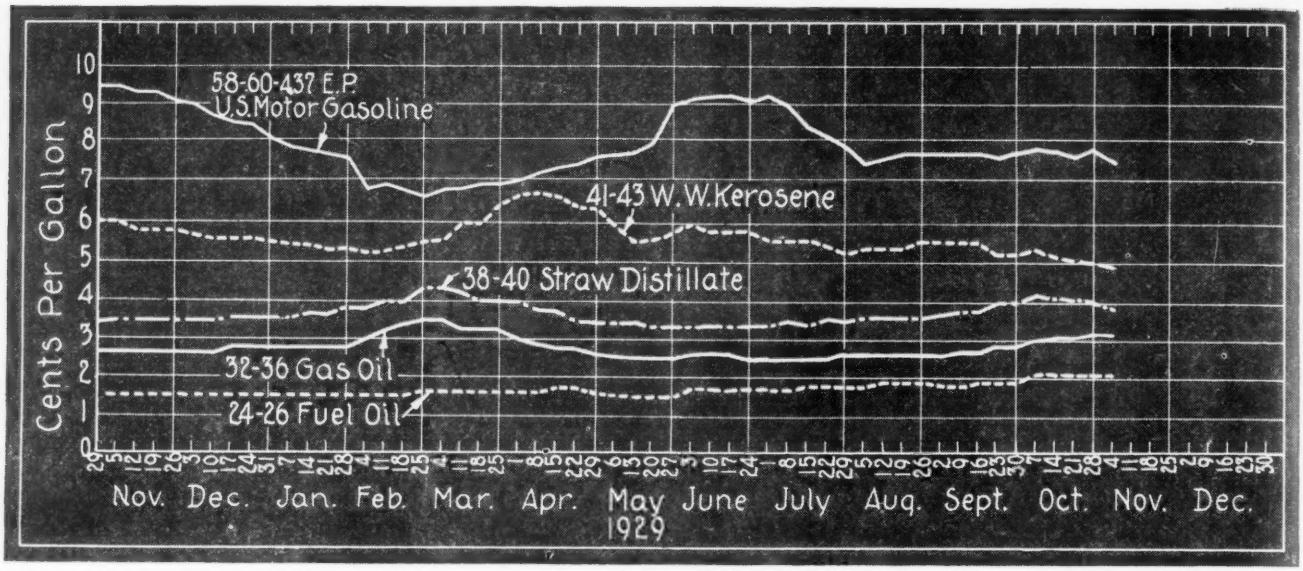
All grades of burning oils were in lighter demand toward the close of October. The expected brisk demand and rush orders from a number of jobbers following the brief cool snap in northern consuming districts failed to materialize.

Distillate prices eased off slightly. Good 38-40 straw grade was available in Oklahoma at 3.75 cents as the month closed.

Gas oil prices were steady. Rumors were current that the zero grades sold slightly lower from one or two sources but a careful check showed this to be the exception rather than the rule and the bulk of goods moved on the spot market was checked at unchanged prices from the previous week. A rumor also was heard late in the week that a large buyer had purchased a quantity of gas oil for export shipment. Up to close of business Nov. 2 no details could be learned about the reported sale.

Fuel oil prices were steady. Slight

Current Prices of Principal Mid-Continent Refined Products



Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue.

changes were made within the general price ranges but the high and low figures of the past week were maintained by majority of sellers.

A number of refiners said that weather conditions within the next few weeks would play á vital part in the price trend of these three products.

Neutral Oils, Bright Stock, and Wax

Neutral oils and bright stocks continued active with slight price advances for some grades. Steam refined goods were advanced by one or two sellers, as were a few grades of neutral oils.

Wax was in excellent demand and a number of sellers advanced quotations to 3.25 cents; others quoted 0.125 cent lower. Quotations on deliveries over the last half of November and later were fractionally higher.

Gulf Lubes In Fair Demand

HOUSTON, Nov. 4.—Prices were unchanged in the Gulf Coastal lubricant market the past week. Demand was fair, but insufficient to stop shading of prices on individual grades where competition in selling had developed. In the main, however, list prices were being adhered to better than in recent weeks. Winter demand for zero cold test goods in the northern part of the country was considered to be favorable to generally better market conditions.

CLEVELAND, Oct. 31.—John Paul Hanna, president of the National Recording Pump Co. of Dayton, Ohio, was married to Miss Mildred Slorp in New York, Oct. 8. The couple will make their home in Oakwood Manor at Dayton.

LEBANON, Ill.—Mr. and Mrs. F. S. Betten are the parents of a nine pound boy. He has been named Robert Christopher. Mr. Betten is agent for the Pierce Petroleum Corp. here.

Correction

Prices of Oklahoma 32-36 straw zero and dark gas oils as of Oct. 28 in the refinery market tables on page 347 of the Oct. 30 issue of NATIONAL PETROLEUM NEWS, were reversed.

Correct prices of 32-36 straw zero gas oil as of Oct. 28 was 3.25 to 3.50 cents, and of 32-36 dark gas oil, 3.00 to 3.125 cents, instead of 3.00 to 3.125 cents for the former and 3.25 to 3.50 cents for the latter grade as published.

On page 344 of the same issue, in the comparative price table, Kansas point of origin price of U. S. Motor gasoline was published at 7.8500 cents. Correct price was 7.50 cents as of Oct. 28.

Shipments From Southern California

LOS ANGELES, Oct. 31.—Bulk petroleum shipments out of California for the week ending Oct. 26 were figures being in barrels:

Destination	Fuel	Diesel	Gasoline	Distillate	Gas Oil	Crude	Kero
Pacific Foreign	411,707	11,362	5,418	.....	.....	165,893	100,567
Atlantic Domestic	.....	.....	629,842	65,028	.....	.....	53,000
Atlantic Foreign	.....	8,596	80,000	.....	.....	.....	.....

The large amount of gasoline moving to the Atlantic Seaboard was shipped from California companies to parent companies on the eastern coast. The continual shipping between such companies accounts, no doubt, for the dearth of spot gasoline sales in the Pacific Coast export market.

Prices 10 Years Ago
Nov. 3, 1919

	Oklahoma	Penna.
58-60 U. S. Motor.....	17.00–17.25c	20.00–20.25c
80-84 Natural	22.75–23.00c	.....
Kerosene (41-43 Okla.; 47 w. w. Pa.)	10.00–10.50c	12.50–12.75c
Fuel Oil (24-26 Okla.; 38-40 Pa.)	$0.90–$1.00	6.50–6.75c
Crude (Okla. 35-35.9)....	$2.25	$4.25
Chicago tank wagon	.....	21.00c

Prices A Year Ago
Nov. 5, 1928

	Oklahoma	Penna.
58-60 U. S. Motor.....	9.5573c	11.50–12.00c
Grade A Natural	9.50–9.625c	.....
Kerosene (Okla. 41-43; Pa., 47 w. w.)	6.00c	8.125–8.50c
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.65–$0.675	4.50–5.00c
Crude (Okla. 35-35.9)....	$1.31	$3.35
Chicago tank wagon	.....	15.00c

Chicago Resale Market

U. S. Motor Prices Cover Smaller Range

Staff Special
CHICAGO, Nov. 2

THE gasoline situation was holding the center of attention in the Chicago resale market as the week closed Nov. 2, although there was not much activity reported on any commodity. Last week's export buying in the Mid-Continent caused most of the cheap gasoline that was being offered to be taken up and forced Chicago carlot marketers to advance their prices to jobbers.

A number of marketers advanced their U. S. Motor gasoline quotations to 7 cents toward the end of last week, but it was not until Oct. 30 that most of them met this figure. A few sellers were still offering goods at 6.875 cents on Nov. 2. This was mostly material of which they were "long" at prices around 6.625 cents. Marketers reported that resale quotations were around 6.75 to 6.875 cents in Oklahoma and Texas, although an occasional lot was offered out of west Texas at 6.625 cents, f.o.b. Group 3.

The high range of the U. S. Motor market continued at 7.50 cents. This was the top price at which the bulk of sales were reported at the close of business last week and on Oct. 28 and 29 the major Oklahoma and Chicago district refiners reduced their quotations to this figure. On the other hand, some of the smaller refiners, who had previously quoted 6.875 to 7.25 cents, advanced their quotations.

Spot demand for U. S. Motor gasoline was not very active this week. Most jobbers were still buying only as they required goods and this demand was slowed down somewhat by inclement weather over most of the middle west. The bulk of the gasoline being sold at independent service stations was evidently being bought on contracts, as refiners reported doing an excellent business on this basis.

Although higher gravity gasolines were not moving very freely on the spot market, they were less freely offered than previously. One or two sellers reported a considerable pickup in demand. The price range on 64-66, 375 e.p. moved up 0.125 cent during the week, quotations on Nov. 2 being at 7.875 to 8.125c.

Very little activity was apparent on kerosene this week. A number of the trade said they had not sold a car for a week or two and that jobbers were sufficiently well stocked to take care of their current needs. Prices were generally unchanged. Most sellers said they believed prices had little to do with the situation at present. They said they probably would get no more business at prices 0.125 to 0.25 cent lower. Quotations on 41-43 w.w. ranged from 4.50 to 5.25 cents, but the bulk of sales reported were at 4.625 to 5 cents.

Several sellers reported furnace oil distributors and industrial concerns were actively inquiring for gas and fuel oils for shipment over November while others said they had received only a nominal number of inquiries. Quotations for delivery over this period generally were at the same levels which prevailed for spot.

Spot demand was only fair in most quarters. Demand was good enough, however, to hold prices of distillates and fuel oils unchanged and to cause gas oils to move upward a trifle.

Distillates and high cold test fuel oils were more freely offered for prompt shipment but zero fuel and gas oils still were hard to obtain, especially the 28-30 and 18-22 zero fuel oils and the 32-36 straw zero gas oil. Practically no 32-36 ordinary dark gas oil was being offered for prompt shipment at under 3 cents.

One or two brief precipitation periods are forecast for the Standard of Indiana territory next week; otherwise the weather will be mostly fair. Temperatures probably will be close to the seasonal normal in most sections.

Vacuum's Station Chain To Be Held to 14

CLEVELAND, Nov. 1.—Vacuum Oil Co. is planning a chain of 14 service stations in metropolitan Philadelphia and three of the group are being completed. The company's new brand of gasoline, Mobiligas, is already on sale at the stations of Vacuum Oil Co. dealers in Philadelphia.

It has been learned on good authority that the Vacuum is not planning to enter into any extensive retail marketing chain itself and will continue to depend on Independent dealers for its outlet for motor oils.

At present, it is understood, Mobilgas will be sold only in territory within shipping distance of its Paulsboro, N. J., refinery. The gasoline is on sale at Greensburg, Pa., as well as Philadelphia and its market will be gradually expanded in the Paulsboro shipping area.

A cheap cab—but only in price

This Model F. D. Cab gives you all the advantages of the most expensive cab, except as to finish. It is solidly constructed throughout—air seasoned oak framing, heavy steel panels, steel capped doors and composite steel insulated roof. In a few words, it is a cab that stands up well in rough going and gives you the trouble free service you want.
Made in two sizes it can be fitted to practically every make and model of truck. Of course, it has the famous Highland Rocker Sill Mounting. You can inspect this cab at the Highland Distributor near you, or write us for more complete information.

THE HIGHLAND BODY MFG. CO.
430 Elmood Place Cincinnati, Ohio

HIGHLAND
FOR CABS

AIR UNITS
deliver CARE-FREE, OIL-FREE AIR

Freedom from Common Complaints is the first thing about Leader Feather-Valve Air Units that appeals to the station operator.

Freedom from Air Leaks is assured by Leader Rivet-Weld Leak-Proof Tanks, and careful, masterful assembly of the entire unit.

Air Is Delivered Free from Oil. This is accomplished by using automobile-type pressure lubricating system.

Laidlaw Feather Valves—the lightest, finest air compressor valves made—are used exclusively in these compressors.

Write for full description and prices.

LEADER IRON WORKS
2112 N. JASPER ST., DECATUR, ILL.
21 E. 40th St., New York, N. Y.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect November 4

	Price F.O.B Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	7.4764	(Wt. Avg.)	7.4764	(Wt. Avg.)	
Kansas	6.875-7.25				S. O. Neb. & Ind. Ter., etc.
Kansas			7.5833	(Wt. Avg.)	Kansas only.
North Texas	7.00		7.00		
West Texas	7.00		6.875-7.00		
Louisiana-Ark.	7.00-7.25				Mich., Ohio & Indiana.
Louisiana-Ark.			7.50		State or differential haul.
Indiana-Illinois	7.125-7.50		*		S. O. Ind. territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Weighted Average Prices

OKLAHOMA

	Nov. 4		Oct. 28		Oct. 21	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e. p.	69	7.4764	52	7.5938	71	7.6831
60-62 437 e. p. gasoline	2	7.6250	No sales reported		1	7.6250
60-62 400 e. p. gasoline	4	7.7813	5	7.8500	4	8.0625
64-66 375 e. p. gasoline	1	8.2500	No sales reported		2	8.4375

The 0.25 cent reduction in U. S. Motor quotations by several Oklahoma refiners, while others advanced their low prices about the same amount, is reflected in the above weighted average, although the fact that the price range was narrower is not shown.

Domestic demand for all gasolines was comparatively good on contract most of the past week but spot demand was lighter; jobbers were buying strictly on a hand-to-mouth basis.

KANSAS

	Nov. 4		Oct. 28		Oct. 21	
	No. of cars	Price	No. of cars	Price	No. of cars	Price
58-60 U. S. Motor, 437 e. p.	3	7.5833	2	7.5000	2	7.7500

No changes were noted during the week in the price of gasoline for shipment from Kansas refineries to destinations within the state.

GASOLINE AND NAPHTHA

OKLAHOMA	Prices Nov. 4	Prices Oct. 28	Prices Oct. 21
48-50 450 e.p. naphtha	7.25	7.25 – 7.50	7.25 – 7.50
50-52 450 e.p. naphtha	7.25	7.25 – 7.50	7.25 – 7.50
56-58 450 e.p. gasoline	6.875- 7.00	6.875- 7.25	6.75 – 7.25
58-60 450 e.p. gasoline	6.875- 7.00	6.875- 7.25	6.75 – 7.375
64-66 390 e.p. gasoline	7.75 – 8.125	7.75 – 8.125	7.75 – 8.125
68-70 350-360 e.p. gasoline	8.00 – 8.375	8.00 – 8.375	8.00 – 8.375

†Prices nominal ††Only one refiner quoting *Quotations only

CHICAGO RESALE (F. o. b. Group 3, altho goods may originate elsewhere)

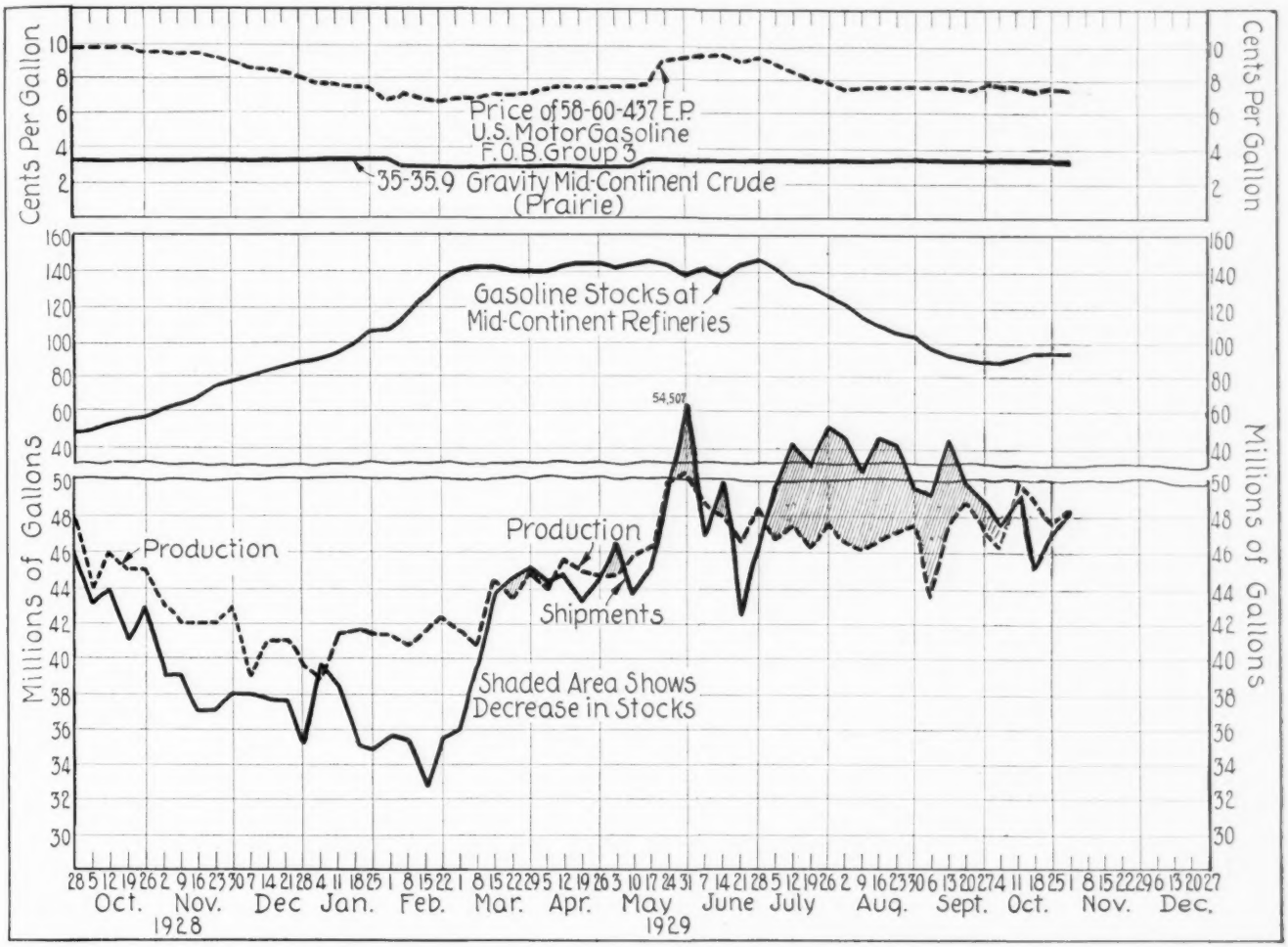
	Prices Nov. 4	Prices Oct. 28	Prices Oct. 21
58-60 U.S. Motor, 437 e.p.	7.00 – 7.50	6.875- 7.50	6.875- 7.75
60-62 437 e.p. gasoline	7.125- 7.625	7.125- 7.75	7.00 – 7.75
60-62 400 e.p. gasoline	7.50 – 7.875	7.50 – 7.875	7.375- 7.875
64-66 375 e.p. gasoline	7.875- 8.125	7.875- 8.00	7.75 – 8.00

(Continued on Page 98)

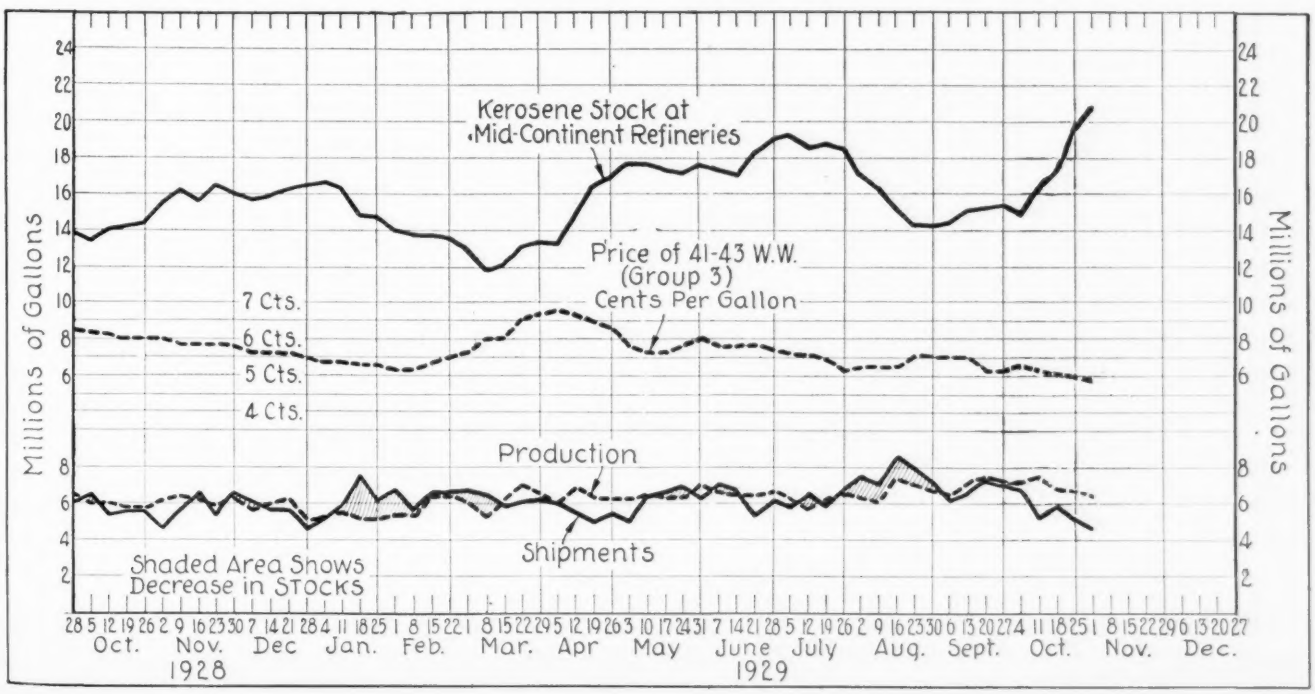
**Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending November 1

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 90



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

PENNSYLVANIA

	Prices Nov. 4	Prices Oct. 28	Prices Oct. 21
52-54 Naphtha	7.75 – 8.25	8.00 – 8.25	7.50 – 8.25
54-56 Naphtha	8.00 – 8.25	8.00 – 8.50	7.75 – 8.25
58-60 U.S. Motor 437 e.p.	8.25 – 9.00	8.375– 9.00	8.50 – 9.00
60-62 400-410 e.p. gasoline	8.75 – 9.50	9.00 – 9.50	8.75 – 9.25
64-66 390 e.p. gasoline	9.25 –10.00	9.25 –10.00	9.25 –10.00
68-70 Str-run gas 350-360 e.p.	10.50 –11.00	10.50 –11.00	10.00 –10.75

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline

Ohio, delivery at any point	10.00	10.00	10.00

KANSAS (F. O. B. refinery Kansas destination)

60-62 400 e.p. gasoline	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
64-66 375 e.p. gasoline	8.125– 8.25	8.00 – 8.25	8.00 – 8.25

NORTH TEXAS

56-58 450 e.p. gasoline	6.625	6.625	6.50 – 6.625
58-60 450 e.p. gasoline	6.625– 6.75	6.625– 6.75	6.625
58-60 U.S. Motor 437 e.p.	7.00	6.875– 7.00	6.75 – 7.00
60-62 400 e.p. gasoline	7.125– 7.375	7.125– 7.25	7.00 – 7.25
64-66 390 e.p. gasoline	7.50 – 7.75	7.50 – 7.625	7.25 – 7.50
64-66 375 e.p. gasoline	7.75 – 8.00	7.75 – 7.875	7.50 – 7.625
68-70 350-360 e.p. gasoline	8.00 – 8.125	8.00 – 8.125	8.00 – 8.25

**WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)

50-52 naphtha	6.125– 6.25	6.00 – 6.125	6.125– 6.25
‡58-60 437 e.p. gasoline	6.875– 7.00	6.625– 6.75	6.50 – 6.75
58-60 U.S. Motor 437 e.p. gasoline	6.625– 6.75	6.75 – 7.00	6.75 – 7.00

‡Gravity changed from 56-58 to 58-60 Oct. 7.

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 390 e.p. gasoline	7.50	7.375	7.375

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	7.50	7.375	7.375

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	‡9.00 –10.00	‡9.00 –10.25	‡9.00 –10.25
58-61 375-400 e.p. gasoline	10.00 –11.00	10.00 –11.25	10.00 –11.25
42-45 Engine Distillate 445-480 e.p.	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00

‡For outside state shipment price was 7.25-8.25c on Oct. 21. 7.00-8.00c on Oct. 28 and Nov. 4.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA

Grade AA, 80-87.9, 90% Recovery	6.75	6.75 – 6.875	6.75 – 6.875
Grade A, 72-79.9, 90% Recovery	6.75	6.75 – 6.875	6.75 – 6.875
Grade BB, 84-92, 85% Recovery	6.50 – 6.625	6.75	6.625– 6.75
Grade B, 76-83.9, 85% Recovery	6.50 – 6.625	6.75	6.625– 6.75
Grade C, 80-92, 78% Recovery	6.50 – 6.625	6.75	6.625– 6.75

NORTH TEXAS (F. o. b. Breckenridge)

Grade AA, 80-87.9, 90% Recovery	6.75	6.75 – 6.875	6.75 – 6.875
Grade A, 72-79.9, 90% Recovery	6.75	6.75 – 6.875	6.75 – 6.875
Grade BB, 84-92, 85% Recovery	6.50 – 6.625	6.75	6.625– 6.75
Grade B, 76-83.9, 85% Recovery	6.50 – 6.625	6.75	6.625– 6.75
Grade C, 80-92, 78% Recovery	6.50 – 6.625	6.75	6.625– 6.75

NORTH LOUISIANA (F. o. b. Monroe District)

Grade AA	†7.00	†7.00	†7.00
Grade BB	†6.75	†7.00	†7.00
Grade C	†6.75	†7.00	†7.00

CALIFORNIA

75-85, 375-390 e.p. blend	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50

†Prices nominal ††Only one refiner quoting *Quotations only

BURNING OILS

PENNSYLVANIA

	Prices Nov. 4	Prices Oct. 28	Prices Oct. 21
45 w.w. kerosene	6.875– 7.25	6.875– 7.25	6.75 – 7.00
46 w.w. kerosene	7.25 – 7.50	7.25 – 7.50	6.875– 7.25
47 w.w. kerosene	7.375– 8.00	7.50 – 8.00	7.25 – 7.75
300 mineral seal	7.00 – 7.75	7.25 – 7.75	7.00 – 7.25

CHICAGO RESALE (F. o. b. Group 3, altho goods may originate elsewhere)

41-43 w.w. kerosene	4.625– 5.00	4.625– 5.00	4.625– 5.00

OKLAHOMA

41-43 w.w. kerosene	4.625– 5.25	4.75 – 5.25	4.75 – 5.25
42-44 w.w. kerosene	5.25 – 5.75	5.25 – 5.75	5.25 – 5.75

KANSAS (F. O. B. refinery Kansas destination)

41-43 w.w. kerosene	5.375– 5.625	5.50 – 5.75	5.50 – 5.75
42-44 w.w. kerosene	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00

NORTH TEXAS

40-42 w.w. kerosene	4.25 – 4.375	4.25 – 4.375	4.25
41-43 w.w. kerosene	4.375– 4.625	4.375– 4.625	4.375– 4.50

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosene	5.25 – 5.375	5.25 – 5.375	5.25 – 5.375
42-44 w.w. kerosene	5.50	5.50 – 5.625	5.50 – 5.625

ARKANSAS (Ark., N. La. and Miss. destination)

42-44 kerosene	5.50	5.50 – 5.625	5.50 – 5.625

CALIFORNIA

38-40 w.w. kerosene	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00

NEUTRAL OIL

PENNSYLVANIA

Vis.		(Viscosity at 70°F.)	
200 No. 3 Assoc. Filt.	24.50 –26.00	25.00 –26.00	24.00 –27.00
180 No. 3 Assoc. Filt.	19.00 –22.00	19.50 –22.00	18.50 –21.50
150 No. 3 Assoc. Filt.	15.00 –18.00	15.00 –18.00	15.00 –18.00
		(Non Viscous)	
34 Grav. 330-340 Flash	7.00 – 7.50	7.375– 7.75	7.375– 7.75

**OKLAHOMA

Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00
150	No. 3	7.50 – 8.25	7.50 – 8.50	7.50 – 8.25
150	No. 4	6.75 – 7.50	6.75 – 7.50	6.75 – 7.50
180	No. 3	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
180	No. 4	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
180	No. 5	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
200	No. 3	9.75 –11.00	9.50 –11.00	9.50 –11.00
200	No. 4	9.00 –10.00	9.00 –10.00	9.00 –10.00
200	No. 5	9.00 – 9.50	8.75 – 9.50	8.75 – 9.50
220	No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220	No. 4	12.00 –12.50	12.00 –12.50	12.00 –12.50
220	No. 5	11.00 –12.00	11.00 –12.00	11.00 –12.00
240	No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
240	No. 4	12.00 –13.00	12.00 –13.00	12.00 –13.00
240	No. 5	11.00 –13.00	11.00 –13.00	11.00 –13.00
280	No. 3	14.00 –16.00	14.00 –16.00	14.00 –16.00
280	No. 4	13.00 –15.00	13.00 –15.00	13.00 –15.00
280	No. 5	12.00 –14.00	12.00 –14.00	12.00 –14.00

**Represents Both Sales and Quotations.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL

Vis.	Color	Prices Nov. 4	Prices Oct. 28	Prices Oct. 21
		(Viscosity at 100°F., pour test 0)		
100	No. 2 Pale	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
200	No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
300	No. 3 Pale	10.00 –10.50	10.00 –10.50	10.00 –10.50
500	No. 3½ Pale	11.50 –12.00	11.50 –12.00	11.00 –11.50
750	No. 4 Pale	12.50 –13.00	12.50 –13.00	12.00 –12.50
200	No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300	No. 5½ Red Oil	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
500	No. 6 Red Oil	9.50 –10.00	9.50 –10.00	9.50 –10.00
750	No. 6 Red Oil	11.50 –12.00	11.50 –12.00	11.00 –11.50

CALIFORNIA

Vis.	Color			
		(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200 Vis. D at 210° Brt. St.	40.00 –42.00	40.00 –42.00	40.00 –42.00
150-160 Vis. D at 210° Brt. St.	37.00 –38.00	37.00 –38.00	37.00 –38.00
150-160 Vis. E 210° Brt. St.	34.00 –36.00	34.00 –35.00	34.00 –35.00
600 St. Ref. Olive Green	10.00 –15.00	10.00 –13.00	10.00 –13.00
600 St. Ref. Dark Green	10.00 –12.00	9.50 –12.00	9.50 –12.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	27.00 –29.00	27.00 –30.00	27.00 –29.00
650 Steam Refined	31.00 –32.00	31.00 –32.00	29.00 –32.00
600 Flash	33.00 –34.00	33.00 –34.00	31.00 –33.00
625 Flash	36.00 –37.00	37.00	35.00 –37.00
600 Warren E	32.00 –32.50	32.00 –32.50	32.50
600 Oil City E	31.00 –32.00	31.00 –32.00	31.00 –32.00
600 D Filtered	36.50 –37.00	36.50 –37.00	36.50 –37.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	51.00 –52.00	51.00 –52.00	51.00 –53.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	50.00	50.00 –51.00	50.00 –51.00

WAX

PENNSYLVANIA (Per pound, New York)

122-124 white crude scale, a.m.p.	3.375– 3.50	3.375– 3.50	3.25 – 3.50
124-126 white crude scale, a.m.p.	3.50	3.50	3.25 – 3.50

**OKLAHOMA

124-126 White Crude Scale, a. m. p.	3.125– 3.25	3.00	3.00

CALIFORNIA

White crude scale, per pound, ton lots, a.m.p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	5.00 – 5.25	4.75 – 5.25	4.75 – 5.00
30-34 fuel oil	4.75 – 5.00	4.625– 4.875	4.375– 4.50
28-32 fuel oil	4.75 – 5.00	4.625– 4.875	4.375– 4.50

†Prices nominal ††Only one refiner quoting *Quotations only

CHICAGO RESALE (F. o. b. Group 3, altho goods may originate elsewhere)

	Prices Nov. 4	Prices Oct. 28	Prices Oct. 21
38-40 straw distillate	3.875– 4.00	3.875– 4.00	3.875– 4.00
32-36 ordinary dark gas oil	3.00	2.875– 3.00	2.875– 3.00
32-36 dark zero gas oil	3.125– 3.25	3.00 – 3.25	3.00 – 3.25
32-36 straw zero gas oil	†3.25 – 3.375	†3.125– 3.375	†3.125– 3.375
28-30 zero fuel oil	†$1.15 –$1.20	†$1.15 –$1.20	†$1.10 –$1.20
28-30 fuel oil	$1.025–$1.075	$1.025–$1.075	$1.025–$1.075
24-26 fuel oil	$0.85 –$0.875	$0.85 –$0.875	$0.80 –$0.825
18-22 fuel oil, low sulfur	$0.65 –$0.675	$0.65 –$0.675	$0.625–$0.675
18-22 fuel oil, high sulfur	$0.675–$0.725	$0.675–$0.70	$0.65 –$0.70

OKLAHOMA

38-40 straw distillate	3.75 – 4.00	4.00	4.00 – 4.125
36-38 straw distillate	3.625– 3.75	3.75 – 3.875	3.75 – 3.875
32-36 straw gas oil	3.00 – 3.25	3.00 – 3.25	3.00 – 3.125
32-36 dark gas oil	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
32-36 straw zero gas oil	3.25 – 3.375	3.25 – 3.50	3.25
32-36 dark zero gas oil	3.125– 3.25	3.25 – 3.375	3.125– 3.25
28-30 zero fuel oil	$1.15 –$1.20	$1.15 – 1.20	$1.15 – 1.20
28-30 fuel oil (in bbls.)	$1.025– 1.10	1.05 – 1.10	$1.075– 1.10
26-28 fuel oil (in bbls.)	$0.90 – 0.95	$0.90 – 0.95	$0.875– 0.925
24-26 fuel oil (in bbls.)	$0.85 – 0.90	$0.85 – 0.90	$0.85 – 0.90
22-26 fuel oil (in bbls.)	$0.75 – 0.825	$0.75 – 0.825	$0.725– 0.825
18-22 fuel oil (in bbls.)	$0.625– 0.70	$0.625– 0.70	$0.65 – 0.725
‡16-20 fuel oil (in bbls.)	$0.575– 0.65	$0.60 – 0.70	$0.60 – 0.70
14-16 fuel oil (in bbls.)	$0.55 – 0.65	$0.55 – 0.65	$0.575– 0.70

‡Gravity changed from 16-18 to 16-20, Aug. 19.

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	4.125– 4.375	4.25	4.25
36-38 straw distillate	4.00 – 4.125	4.00 – 4.125	4.00 – 4.125
32-36 gas oil	3.25 – 3.50	3.25 – 3.50	3.25
18-22 fuel oil	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
10-14 fuel oil	$0.65 – 0.70	$0.65 – 0.70	$0.625– 0.70

NORTH TEXAS

38-40 straw distillate	3.625– 4.00	3.625– 3.75	3.75 – 4.00
32-36 gas oil, cracked	2.75 – 3.00	2.75 – 2.875	2.75
32-36 St. reduced gas oil	2.75 – 3.00	2.75 – 2.875	2.75 – 2.875
24-26 fuel oil (in bbls.)	$0.65 – 0.70	$0.675– 0.70	$0.675– 0.70
20-24 fuel oil	$0.625– 0.65	$0.625– 0.65	$0.625– 0.65
18-22 fuel oil	$0.575– 0.625	$0.60 – 0.625	$0.60

**WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	3.00 – 3.125	3.00 – 3.125	3.00 – 3.25
30-32 gas oil	2.625– 2.875	2.875	.....
28-30 zero gas oil	3.125– 3.25	3.25	3.25
18-22 fuel oil	$0.55 – 0.625	$0.525– 0.625	$0.55 – 0.65

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.25 – 3.50	3.50	3.50 – 3.625
32-36 gas oil, straw	3.25 – 3.50	3.50	3.50 – 3.625
14-16 fuel oil (in bbls.)	$0.75 – 0.80	$0.75 – 0.80	$0.80

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	3.25 – 3.50	3.50	3.50 – 3.625
32-36 dark gas oil	3.25 – 3.50	3.50	3.50 – 3.625
28-30 gas oil	3.125– 3.25	3.125– 3.25	3.125– 3.25
14-16 fuel oil	$0.75 – 0.80	$0.75 – 0.80	$0.80

CALIFORNIA (F. o. b. San Joaquin Valley. At San Francisco 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.40 –$0.60	$0.40 –$0.60	$0.45 –$0.60
14-18 Bunker oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
30-34 gas oil (per bbl.)	$0.80 –$0.90	$0.80 –$0.90	$0.85 –$0.90
27 Plus Diesel oil (per bbl.)	$0.80 –$0.90	$0.80 –$0.90	$0.85 –$0.90

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ½c to ¾c per pound less.) Two refiners quoting.

Snow White	8.50 – 8.75	8.50 – 8.75	8.50 – 8.75
Lily White	7.75	7.75	7.75
Cream White	6.75	6.75	6.75
Light Amber	3.75	3.75	3.75
Amber	3.50	3.50	3.50
Red	3.25	3.25	3.25

PETROLEUM COKE

**OKLAHOMA

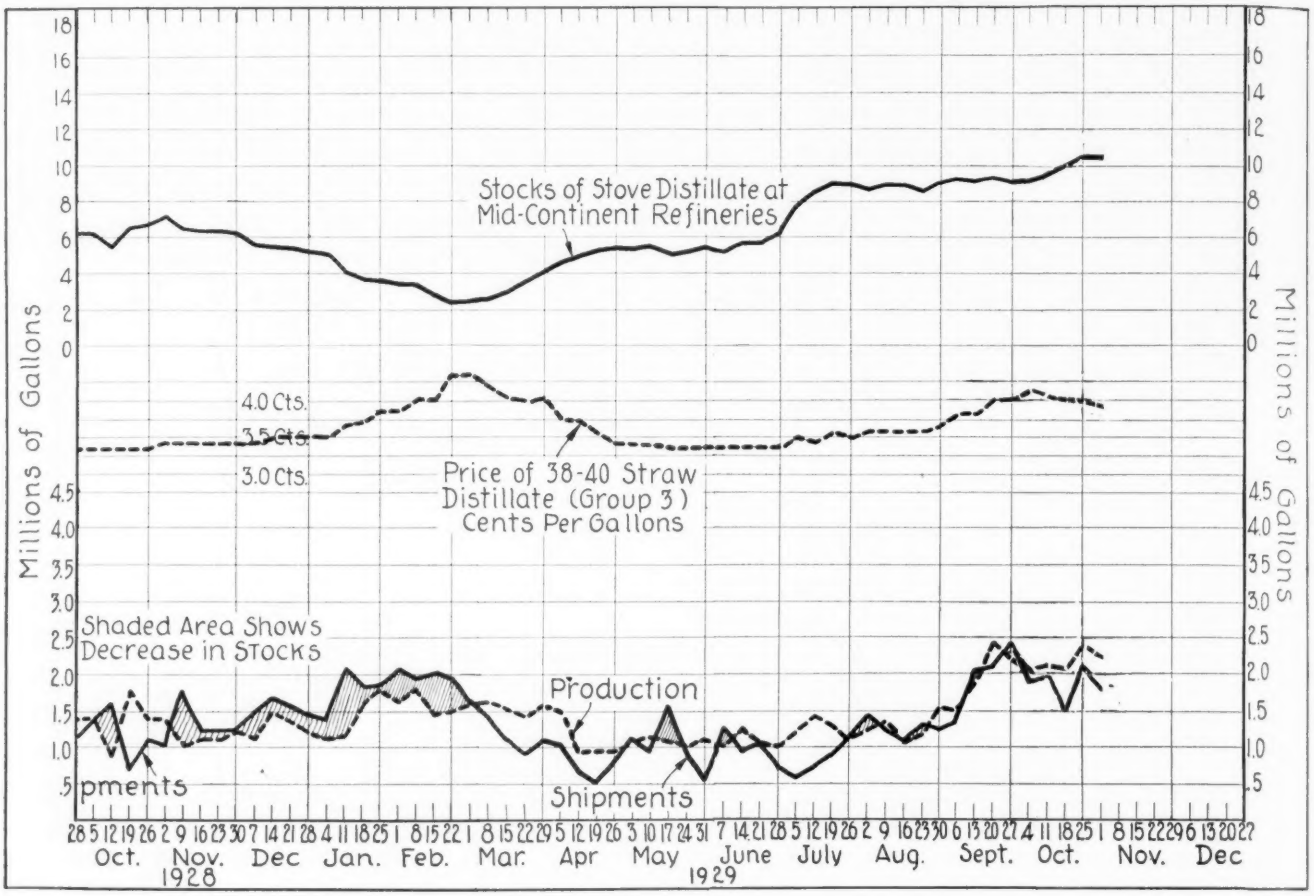
(Per ton in car lots)

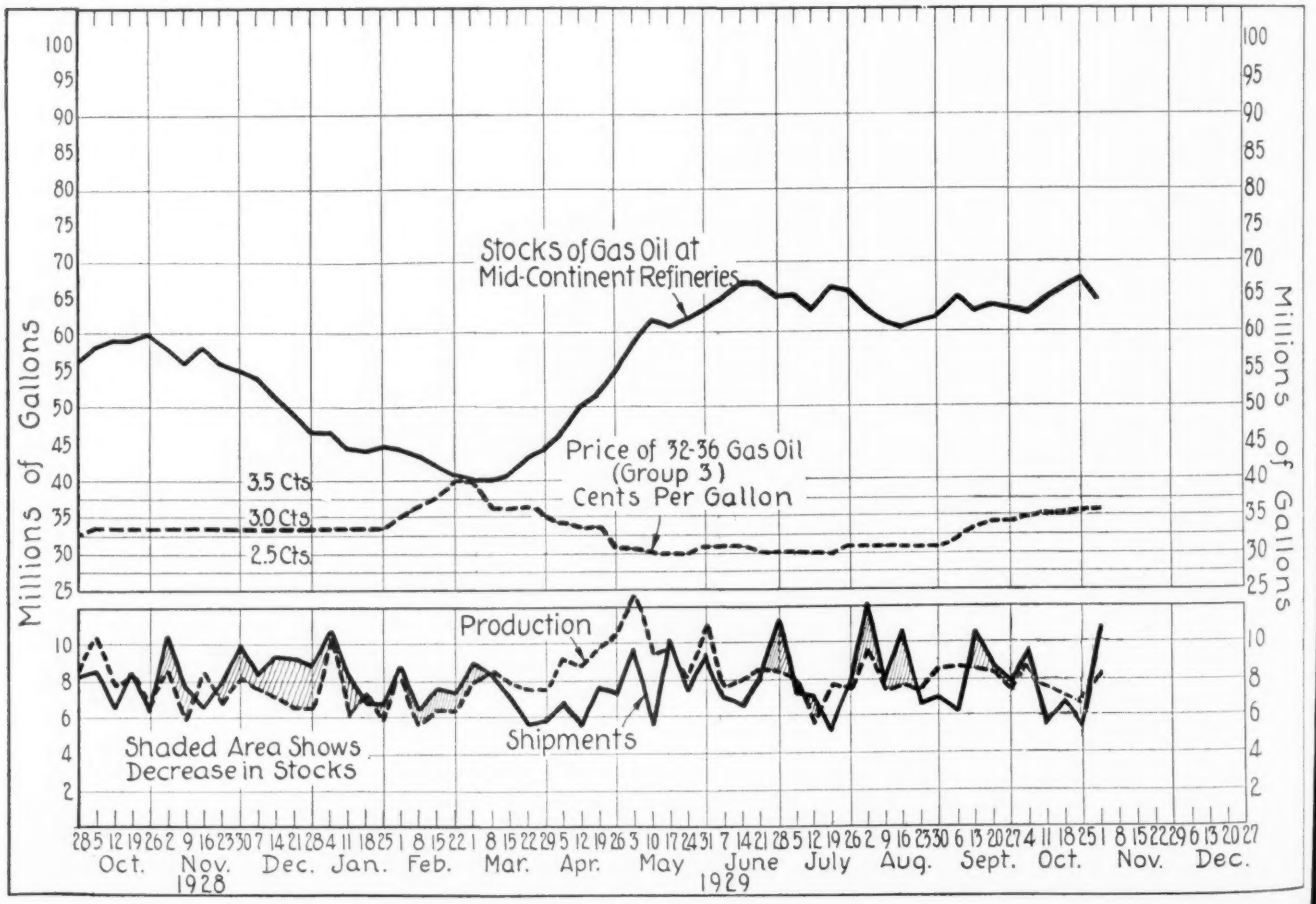
Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

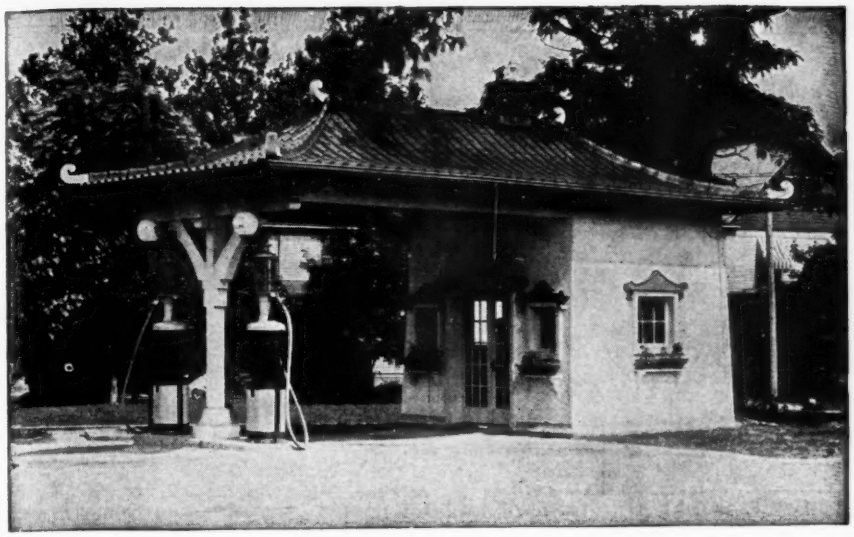
**Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending November 1

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Millions of Gallons
Stocks of Stove Distillate at Mid-Continent Refineries
4.0 Cts.
3.5 Cts.
3.0 Cts.
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallons
Shaded Area Shows Decrease in Stocks
Production
Shipments
Oct. Nov. Dec Jan. Feb. Mar. Apr May June July Aug. Sept. Oct. Nov. Dec
1928
1929


Millions of Gallons
Millions of Gallons
Stocks of Gas Oil at Mid-Continent Refineries
3.5 Cts.
3.0 Cts.
2.5 Cts.
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
Production
Shipments
Shaded Area Shows Decrease in Stocks
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1928
1929



Gasoline and Oil Filling Stations

and Steel Buildings

We manufacture the simplest to the most elaborate Stations. Put your own individuality in your Filling Stations—Let us help you work this out.

The Edwards Manufacturing Co.

524-544 Eggleston Ave. **Cincinnati, Ohio**

FOR 40 CENTS A DAY

the OILGRAM gives you accurate market information you couldn't gather yourself for less than

$40 A DAY

The OILGRAM'S staff at each of the four publication points—Tulsa, Chicago, Cleveland, New York—make *daily* personal calls, and use long distance phone and telegraph services freely in gathering the market information in each day's issue of the OILGRAM.

The OILGRAM brings you the gist of this expensive market check every day at a low cost—$65 for 6 months, or $100 a year, payable in advance—less than 40 cents a day.

Keep yourself posted *daily* on prices and important market developments through the OILGRAM.

Send your order or wire your nearest mailing point, and the OILGRAM will be started to you immediately. Make check payable to The W. C. Platt Company or Platt's Oilgram.

TULSA—904 World Building
CLEVELAND—1213 West Third Street
CHICAGO—35 East Wacker Drive
NEW YORK—342 Madison Avenue

Brookins 9-14
SERVICE STATION EQUIPMENT

If you're sure it's there, you can *forget* it

WHEN you're waiting on a customer . . . doing any of the hundred little things that come under the classification of "service" . . . probably the last thing that enters your mind is the trademark on your oil measure. You look at that trademark when you *buy* filling station equipment. And then you *forget* it until it's time to get new equipment.

But . . . *don't forget to look for that Brookins trademark when you do buy filling station equipment.*

The name Brookins appears on *every* product that leaves the Brookins factory. It tells you that Brookins . . . the biggest manufacturer in the business . . . will stand behind that product unconditionally.

Look for the Brookins trademark on filling station equipment. Then you can be *sure* of getting the sturdy *quality* that made the name famous.

Brookins Oil Measures
Made in one, two, four and five quart sizes . . . with patented Brookins non-spill pouring top.

Brookins Portable Drain Tank
Slides under any car, holds about four gallons and when full can be either dragged or carried upright.

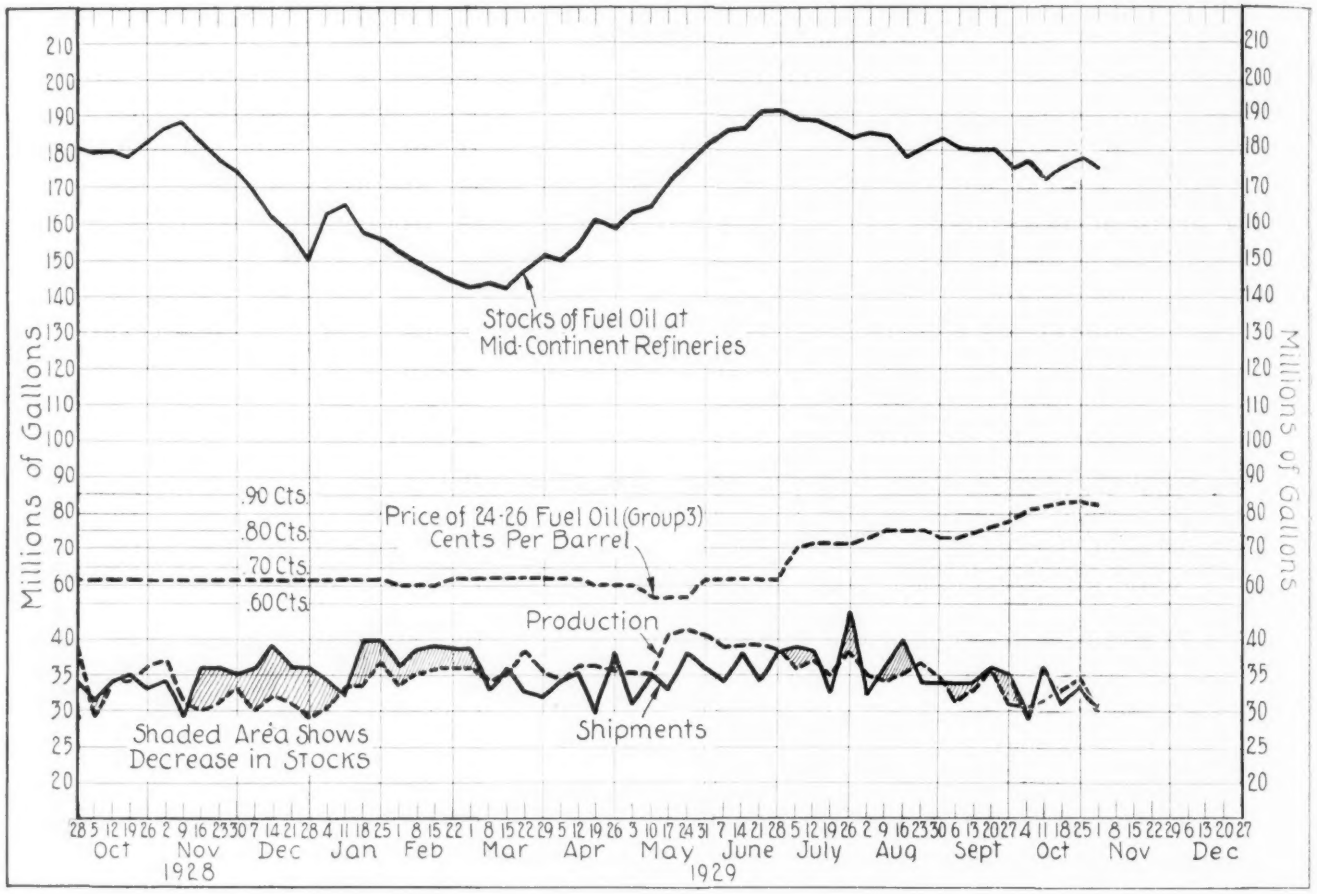
Brookins Crank Case Filler
Comes in six, eight and ten quart sizes. Fills any crank case with only one trip to the pump. Metal hose reaches any oil intake.

Brookins Gasoline Can
Comes in two and five gallon sizes. A very useful emergency can for delivering gas to the stranded car. Metal hose will reach any gasoline intake.

BROOKINS MFG. CO.
DAYTON, OHIO

Barometer of Mid-Continent Refinery Market—Week Ending November 1

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Gasoline Steady Despite Cheaper Crude

LOS ANGELES, Oct. 31

CALIFORNIA refiners are basing their present operations on the anticipation of a return of crude oil prices to somewhere near their old levels in the near future.

As most crude oil is sold in California fields under contracts that do not take into account a change of price for at least ten days, very little crude has been sold at the lower levels. For this reason local marketers have been able to prevent any serious breaking of the refined products price structure.

California shippers have had numerous inquiries from buyers on the eastern seaboard since the cut in crude was announced, but at latest reports they were still holding out in hopes that crude prices would be raised. One cargo was reported sold at slightly under 8.50 cents c.i.f. New York harbor. At existing tanker rates this would be around 6 cents f.o.b. San Pedro harbor. Quotations for bulk shipments ranged from 6.25 to 7 cents.

Tanker rates took a slight rise recently. The last clean boat reported chartered went at $0.90 per barrel and shipping firms are now asking from $1.00 to $1.05.

Although it is thought that many petroleum products for export could be purchased at comparatively low figures, quotations have not changed appreciably since last week.

The same conditions existed in the local markets. Several refiners refused to post any prices for fear of influencing markets in other parts of the country.

Rumors of spot sales of various products at ridiculously low prices were heard on all sides but at the same time it was indicated that market conditions were on their way out of the hole.

One or two small refiners, fearing that a gasoline war was in the offing, unloaded some natural gasoline at 7.75 cents although general quotations ranged from 8 to 8.50 cents. It was also reported that several tank cars of fuel oil moved at as low as $0.30 per barrel. Fuel oil was quoted, however, at from $0.40 to $0.50 per barrel.

Gasoline for shipment out of the state could be bought for "almost anything," according to one dealer. General quotations ranged from 7 to 8 cents however with some scattered stuff moving as low as 6.75 cents. In-state gasoline continued to hold an even keel as major marketers endeavored to absorb and regulate the surplus motor fuel of small refiners.

A little gasoline was sold in outlying districts for 8.75 cents, without tax, and it was generally quoted at from 9 to 10 cents. Large interests were reported to be paying independent buyers 10 cents a gallon for gasoline to prevent the retail market from being flooded.

Pennsylvania Market

Kerosene and Fuel Oil Active

CLEVELAND, Nov. 4.—Kerosene and fuel oil continued to be the favored commodities in western Pennsylvania markets last week. Prices for these oils recorded further advances. Gasoline prices receded approximately 0.125 to 0.5 cent. Other commodities were generally unchanged.

Toward the end of last week there was a gradual falling off in the exceptionally good demand which has prevailed for kerosene for about three weeks. This came, however, only after new highs for prices on the present move had been established. The result was a minor reaction in prices. The 45 w.w. grade, after advancing to a minimum of 7 cents slipped back to 6.875 cents.

Goods were not freely offered at the lower figure, but the small lots offered by several sellers were sufficient in the aggregate to be representative of the market. More refiners reported last week that they would be unable to accept additional kerosene business until the middle of November.

There was no let up in the jobbing demand for the heavier burning oils. Prices for all grades moved up 0.125 to 0.25 cent. Less 36-40 fuel oil was being cracked, according to reports from several districts, and this caused a further scarcity in offerings of the 30-34 and 28-32 gravity oils.

Increased demand for the high gravity gasolines, which has been anticipated, failed to materialize. These grades were offered at prices 0.25 to 0.5 cent under the levels prevailing the previous week as a result. Inclement weather was given as the main reason for the further decline of 0.125 cent to 8.25 cents in prices for 58-60 U. S. Motor in some districts.

Bright stock manufacturers have completed their November purchases, according to reports, and this accounted largely for the quieter steam refined market. Most bright stock manufacturers reported they had covered on their November requirements at from 26 to 27 cents. Small lots of 600 filterable still were available at the end of last week at the higher figure. One refiner reported the sale of 10 cars at 27.50 cents for shipment over November.

The demand for bright stock was steady. Several manufacturers said they would have very little goods to offer in the open market this month. Prices were unchanged from the previous week.

HEAVY DUTY TRUCK TANKS

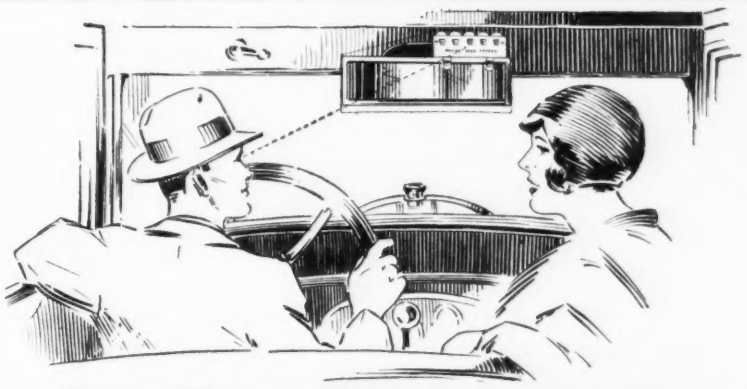
The Kind That Will Stand Abuse

ALL SIZES — ALL TYPES

Send us your inquiry

BROWN SHEET IRON & STEEL CO.

ST. PAUL - - - - MINNESOTA



Get New Oil Customers and Bring Back Old Ones with the Oil-O-Meter

Oil-O-Meters in Actual Use

THE Oil-O-Meter is a simple, durable device, easily attached to the motorist's rear-vision mirror. It carries your own name and address and tells the motorists the speedometer mileage at which he should return to your station for a change of oil.

MASS production on this great, good-will building product has now made it available to service stations for distribution free to their customers at an amazingly low price. As a trade attractor, it has no equal.

A GREAT CHRISTMAS GIFT

THE Oil-O-Meter is the most appropriate and suitable gift you can make to your customers as a Christmas remembrance. Costs little more than a greeting card and is of practical value—serviceable for months and years.

WRITE today for full information, prices and details. You will be under no obligation.

F. C. CANODE MFG. CO.
119 So. Clinton
CHICAGO

F. C. CANODE MFG. CO., 119 So. Clinton, Chicago.
Please send me details of Oil-O-Meter.
NAME .....
STREET .....
CITY ..... STATE .....

Eastern Domestic Markets

Gasoline Demand Eases; Prices Steady

Staff Special
NEW YORK, Nov. 2

GASOLINE demand slowed up somewhat in eastern tank car markets the past week, but business was still sufficiently good to maintain prices. Good motoring weather was seen in most districts although threatening reports were issued for the week end. The approach of fall weather has brought with it a good demand for kerosene and burning oils. Prices of all commodities were unchanged in all districts.

While some market students looked for slightly lower gasoline prices over November, others felt the market was in excellent shape and present prices would be quoted for that period. Jobbers were not seeking quotations for future shipment however. Apparently they expected to see some recession in prices and preferred to hold off and buy only as they needed material.

A resale agent at New York said he noticed the demand slipping somewhat at the close of the week and if it didn't pick up again he probably would have to sell some goods below the general price of 8.75 cents. He has a certain amount of goods to move each month and sells most of it on the spot market. Several other sellers said demand had slowed down but made no mention of reducing prices.

One New York harbor refiner continued to talk of advancing prices when two of the three refiners who purchased gasoline in the open market last week, made additional purchases this week.

Stocks of gasoline were at favorable levels at most eastern plants, it was reported, and further, refiners were believed to be holding their production down in line with consumption. California gasoline brought into eastern ports during the week ended Oct. 26, was less than the previous weeks by approximately 100,000 barrels. High tanker rates and the scarcity of inter-coastal clean ships accounted for the decrease. This helped to maintain the excellent position California gasoline has enjoyed on the east coast for some time past.

There were again reports of shading prices at Baltimore, but no actual check could be made of the sales. Sellers there were quoting 9 cents for U. S. Motor and 9 to 9.25 for California goods.

New England prices were unchanged; several sellers said spot business was not brisk. The contract movement was good, however, and sellers had no surplus goods to dispose of.

The approach of the burning oil season continues to make itself felt in additional kerosene and gas oil business but prices have failed to show any of the expected advance. At Baltimore, New York and Philadelphia quotations were being made at 7.75 for kerosene with no sellers accepting business below that figure. A Baltimore distributor obtained a fraction above 7.75 cents on a small amount of business.

Gas oil prices were unchanged at 4.75 cents although sellers were of the opinion that prices would rise in reaction to the additional business. One seller at New York reported he had disposed of a great deal of his production over the consuming season and that he had advanced his price to 5 cents.

Grade C bunker oil was unchanged at $1.05 a barrel, f.o.b. terminals in New York harbor. A buyer seeking quotations for Canadian points was quoted $1.60 per barrel f.o.b. terminal at New Brunswick, and $1.20 per barrel f.o.b. Halifax.

Gulf Coast Markets

Large Cargo of Lubes Sold for Export

Staff Special
NEW YORK, Nov. 2

BULK gasoline and kerosene business continued at a standstill the past week. Some revision of export prices for South Texas lubes was noted but otherwise prices were unchanged.

A 50,000-barrel cargo of 500 viscosity, No. 5 to 6 color red oil and 100 viscosity, No. 2 unfiltered pale oil, was lifted from the Gulf the past week for shipment to the United Kingdom. The cargo was equally divided between the two grades. Prices were 8.50 cents for the red goods and 6.25 for the pale, both f.o.b. tanker at Houston.

Eight and a half cents is a lower price than most companies quote for that grade of red oil, the general quotation being 9.25 to 10 cents f.o.b. Houston. The goods which made up the above cargo, however, was distress, the buyer reported, and was not a criterion of the general market.

Quotations for 100 viscosity pale oil were down 0.25 cent with other grades unchanged. Quotations on red oil in some cases were lower by 0.5 to 1 cent. The trade reported there was no great demand for spot material. Most of the goods that has moved has been shipped to England.

Grade C bunker oil in cargo lots which, a week ago, was reported available under $0.70 cents, was reported by the trade at the close of the past week steady at $0.70 to $0.75 cents.

Domestic markets at the Gulf also were unchanged. There has been no gasoline sold in the open market in 20,000-barrel lots for several weeks, and the market largely has been governed by what could be done in the Mid-Continent field. California goods can be laid down there under 7.50 cents, although some Gulf suppliers were quoting higher for regular U. S. Motor.

Tank car gasoline business at the Gulf has been good several suppliers reported. A majority were obtaining from 8 to 8.25 cents, f.o.b. plant, depending upon the terminal from which it moved.

S. O. Pennsylvania Buys Maloney Stations

NEW YORK, Nov. 2.—Standard Oil Co. of Pennsylvania has obtained more than 50 service stations and bulk plants in Pennsylvania through purchase of the Maloney Oil and Manufacturing Co.'s stations and bulk plants. Standard of Pennsylvania is a subsidiary of the New Jersey Standard.

The stations, on which possession was taken immediately, are in Lackawanna, Luzerne, Lehigh and Schuylkill counties.

The Maloney company retained its plant and business in road oils, paints, turpentine, asphalt, linseed oil and similar products. There will be no change in officials of the company, M. W. Collins, president, said.

Wax Markets

Foreign Activity Subsides

NEW YORK, Nov. 2.—Wax markets were practically lifeless the past week in comparison with the flurry of buying the two previous weeks. Prices for all grades were unchanged.

Foreign buyers showed practically no interest in the market directly in contrast to the activity from the Continent two weeks ago. Several sellers said they had received a few inquiries but none of them developed into sales. One supplier who usually receives a number of inquiries from abroad when there is any activity in the market, reported there hadn't been a single one come into his office the past week. A little goods moved to domestic buyers but the sales were small.

In spite of this inactivity the trade felt that foreign buyers were watching the American market closely to take advantage of any low quotations. The stocks of at least one large buyer abroad are known to be low and the trade feels that to be the case with a great many. They also feel that the buying two weeks ago was made by those who had to have supplies but who wouldn't make larger purchases believing there might be a decline in prices.

Some of the trade said they looked for a slight decline in prices of white crude scale while others believed prices would not go below present levels and probably would advance. The latter opinion was influenced by the 8,000,000-pound reduction in stocks made in September and a large reduction in production. Further declines in both stocks and production are expected for October.

There was a report of some low-priced scale wax moving from the Middle West. An eastern buyer reported purchases could be made there at approximately 3 cents a pound, New York. Actual sales could not be confirmed however and the stuff was believed by some of the trade to be a grade quoted at 2.75 cents, f.o.b. plant, slightly off white with melting point lower than 122-124. White crude scale was selling at the close of the week at 3.375 to 3.50 cents. Yellow crude scale was being quoted at 3.25 to 3.375 cents. A sale of 50 tons of yellow was reported at 3.35 cents, for domestic shipment.

Fully refined goods were unchanged with the low quotation at 4 cents for 123-125 A.m.p. Only comparatively small lots of this grade were available at 4 cents.

WASHINGTON—Crude oil exports from Curacao increased from 204,000 barrels in May, to 367,500 barrels in June.

1879 GOLDEN ANNIVERSARY YEAR 1929

it is not enough
that you specify . . .

100% Pennsylvania Motor Oils

Don't specify simply "100% Pennsylvania Motor Oils." Specify "FREEDOM 100% Pennsylvania Motor Oils."

Then you sell a perfected blend made from 460-470 flash Bright Stock (Sharples Process) and 100% Pennsylvania Crude high flash Neutrals.

Both are made in the two complete plants of an organization which for fifty years has specialized in the refining of 100% Pennsylvania Crude. The Bright stocks are refined in the Coraopolis plant and the Neutrals in the Freedom plant.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

All the experience of fifty years has gone into FREEDOM 100% Pennsylvania Motor Oil. Sell it—fear no competition. Write for quotations. Deliveries available in tank cars, compartment tank cars, barrels, or drums.

Also available for immediate shipment

- 460-470 flash, minimum 85 Visc., low cold test Bright Stock (Sharples process).
- FREEDOM 100% Pennsylvania Crude high flash Neutrals.
- 100% Pennsylvania Motor Oils, blended to your own specifications from FREEDOM 460-470 Bright Stock and FREEDOM 100% Pennsylvania Crude high flash Neutrals.
- FREEDOM 600 Steam Refined.
- FREEDOM filtered low end point Kerosene.

THE FREEDOM OIL WORKS COMPANY
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

	Nov. 4	Oct. 28	Oct. 21
U. S. MOTOR GASOLINE			
New York harbor	8.75	8.75	8.75 – 9.00
Portland district	††10.75	††10.75	*11.00
Boston district	††10.25	††10.25	*10.50
Providence district	††10.25	††10.25	*10.50
Philadelphia district	9.00	9.00	9.00
Baltimore district	9.00	9.00	9.00
Norfolk district	9.00	9.00	9.00
Charleston district	9.00	9.00	9.00
Savannah district	9.00	9.00	9.00
Jacksonville district	9.00	9.00	9.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.00	9.00	9.00
Philadelphia district	9.00	9.00	9.00
Baltimore district	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
WATER WHITE KEROSENE			
New York harbor	7.75	7.75	7.75
Philadelphia district	7.75	7.75	7.75
Baltimore district	7.75	7.75	7.75
GAS OIL: 28-34 Gravity			
New York harbor	4.75	4.75	4.75
Boston district	4.75	4.75	4.75
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
Boston district	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
GRADE C BUNKER OIL†			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10
MEDICINAL OILS, RUSSIAN			
.885 890 s.g. 320-330 vis.	$0.82 – 0.97	$0.82 – 0.97	$0.82 – 0.97
.870-875 s.g. 145-155 vis.	$0.74 – 0.89	$0.74 – 0.89	$0.74 – 0.89

Note: Above gasoline prices do not include inspection tax levied in some states *Nominal and Minimum delivered. **Delivered prices. †Lighterage 5c per bbl. additional. ††Minimum delivered.

New York Export Market

(Lubricating oils are per gal. in bbls.)

	Nov. 4	Oct. 28	Oct. 21
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	54.00 –57.00	56.00 –58.00	57.00 –60.00
600 D filtered	44.00 –46.00	44.00 –46.00	45.00 –46.00
600 Warren E filtered	40.00 –41.00	39.00 –41.00	40.00 –41.00
600 s.r. unfiltered	33.00 –35.00	33.00 –35.00	32.00 –35.00
650 s.r. unfiltered	38.00 –40.00	38.00 –40.00	37.00 –39.00
600 flash, s.r.	39.00 –42.00	40.00 –42.00	39.00 –41.00
630 flash, s.r.	44.00 –46.00	43.00 –45.00	43.00 –45.00
RED ENGINE OILS (Vis. 100°)			
300 vis No. 6½ color	20.00 –21.00	20.00 –21.00	20.00 –21.00
250 vis. No. 6 color	18.00 –20.00	18.00 –20.00	18.00 –20.00
200 vis. No. 6 color	16.00 –17.00	16.00 –17.00	16.00 –17.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¼ color	21.00 –22.00	21.00 –22.00	21.00 –22.00
180 vis. No. 3¼ color	17.00 –18.00	17.00 –18.00	17.00 –18.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00 –32.00	30.00 –32.00	30.00 –32.00
500 vis. No. 6½ color	28.00 –29.00	28.00 –29.00	28.00 –29.00
400 vis. No. 7¼ color	26.00 –27.00	26.00 –27.00	26.00 –27.00
300 vis. No. 6 color	23.00 –24.00	23.00 –24.00	23.00 –24.00
200 vis. No. 6 color	21.00 –22.00	21.00 –22.00	21.00 –22.00
MEDICINAL OILS			
.875-880 s.g.	$0.76 – 0.91	$0.76 – 0.91	$0.76 – 0.91
.860-.865 s.g.	$0.58 – 0.73	$0.58 – 0.73	$0.58 – 0.73
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	3.375– 3.50	3.375– 3.50	3.375– 3.50
124-126 A.m.p.	3.375– 3.50	3.375– 3.50	3.375– 3.50
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
125-127 A.m.p.	4.25	4.25	4.00 – 4.25
128-130 A.m.p.	4.50	4.50	4.25 – 4.50
130-132 A.m.p.	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
133-135 A.m.p.	5.75 – 6.00	5.75 – 6.00	6.00
135-137 A.m.p.	6.25	6.25	6.25
YELLOW CRUDE SCALE			
124-126 A.m.p	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

	Nov. 4	Oct. 28	Oct. 21
GASOLINE			
U. S. Motor	8.50	8.50	8.50
60-62, 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.85	$1.85	$1.85
64-66, cases (cargoes)	$2.00	$2.00	$2.00
KEROSENE			
44 water white	8.00	8.00	8.00
41-43 prime white	7.00	7.00	7.00
Water white, cases (cargoes)	$1.80	$1.80	$1.80
Prime white, cases (cargoes)	$1.70	$1.70	$1.70
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	4.00	4.00	4.00
*30 plus translucent gas oil	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
Grade C bunker oil	$0.95	$0.95	$0.95
Grade C bunker oil, cargoes	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
*Less than ½ of 1% sulphur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
Grade C bunker oil for bunkering purposes, taxes paid	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
SOUTH TEXAS LUBRICATING OILS, (Viscosity at 100°F.) (cold test) (Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	6.00 – 6.50	6.25 – 6.50	6.25 – 6.50
200 vis. No. 3 unfiltered pale	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00
300 vis. No. 3 unfiltered pale	9.75 –10.00	9.75 –10.00	9.75 –10.00
500 vis. No. 3½ unfiltered pale	11.25 –11.50	11.25 –11.50	11.25 –11.50
750 vis. No. 4 unfiltered pale	12.75 –13.00	12.75 –13.00	12.75 –13.00
1200 vis. No. 5 unfiltered pale	16.25 –16.50	16.25 –16.50	16.25 –16.50
200 vis. No. 5-6 red oil	7.00 – 8.00	8.00	8.00
300 vis. No. 5-6 Red oil	8.00 – 8.50	8.50	8.50
500 vis. No. 5-6 red oil	9.25 –10.00	9.25 –10.00	9.25 –10.00
750 vis. No. 5-6 red oil	11.00 –12.00	12.00	12.00
1200 vis. No. 5-6 red oil	15.50 –16.50	16.25 –16.50	16.25 –16.50

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipment of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	Nov. 4	Oct. 28	Oct. 21
U. S. Motor gasoline	7.50	7.50	7.50
41-43 w.w. kerosene	6.375– 6.50	6.375– 6.50	6.375– 6.50
*26-32 translucent gas oil	4.00 – 4.125	4.00 – 4.125	4.00 – 4.125
*Less than ½ of 1% sulphur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Nov. 4	Oct. 28	Oct. 21
Gasoline, U. S. Motor, 53-55 Gravity	6.25 – 7.00	6.25 – 7.25	6.75 – 7.25
Gasoline, U. S. Motor-blends and special cuts	7.25 –10.00	7.25 –10.00	7.50 –10.00
Gas Oil, 30-34, per barrel	$0.85 –$1.00	$0.85 –$1.05	$0.85 –$1.05
Diesel Oil, 27 plus, per barrel	$0.87 –$1.00	$0.85 –$1.00	$0.85 –$1.00
Bunker oil, 14-18, per barrel	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash. per gal.	5.75 – 6.25	5.75 - 6.25	5.75 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125, 150 flash	$1.45 $1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Nov. 4 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	35–40	43–45
Gulf to U. K. or Continental ports*	26	30–32
North Atlantic to U. K. or Continental ports*	23–24	27–29
Calif. to North Atlantic ports (not E. of N. Y.)	$1.10	$1.00–$1.05
Gulf to North Atlantic ports (not E. of N. Y.)**	44	41–43

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate. For Tampico 3c per bbl. additional.

FOR PROFIT-MINDED BUSINESS MEN IN THE OIL INDUSTRY

THIS message is addressed to profit-minded business men in the oil industry . . . . to those who seek greater business prestige, greater savings in time, greater hauling economy.

For that type of shrewd buyer Dodge Trucks have an instant appeal. In these able workers owners find power, speed, safety, dependability, good looks and low-cost operation and upkeep — qualities that business men in the oil industry everywhere find so noticeably reflected in lowered hauling costs, and thus greater profits.

Dodge Trucks will fit your needs and earn for you. For proof: Test them—compare them—ask owners in other lines of business and in your own. Buy one of these trucks with abiding confidence.

PRICES

½-TON—109″ wheelbase (4-cyl.)	$ 525
¾-TON—124″ wheelbase (4-cyl.)	675
¾-TON—124″ wheelbase (6-cyl.)	775
1-TON—133″ wheelbase (4-cyl.)	745
1-TON—133″ wheelbase (6-cyl.)	845
1-TON—140″ wheelbase (6-cyl.) Heavy Duty	1065
1½-TON—150″ wheelbase (6-cyl.)	1345
1½-TON—165″ wheelbase (6-cyl.)	1415
2-TON—150″ wheelbase (6-cyl.)	1515
2-TON—165″ wheelbase (6-cyl.)	1585
3-TON—135″ wheelbase (6-cyl.)	1745
3-TON—165″ wheelbase (6-cyl.)	1775
3-TON—185″ wheelbase (6-cyl.)	1845

Chassis f. o. b. Detroit

DODGE TRUCKS

CHRYSLER MOTORS PRODUCT

SOLD BY DODGE BROTHERS DEALERS EVERYWHERE

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t. w. and s. s. markets for a whole year, arranged for quick reference)

These Prices in Effect Nov. 4, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	14	2	16	18	13
Newark, N. J.	15	2	17	19	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	15	4	19	21	12
Cumberland, Md.	16	4	20	22	13
Washington, D. C.	15	2	17	19	12
Danville, Va.	16	5	21	23	12
Norfolk, Va.	15	5	20	22	13
Richmond, Va.	15	5	20	22	13
Roanoke, Va.	15	5	20	21	13
Petersburg, Va.	16	5	21	23	13
Charleston, W. Va.	15	4	19	21	13
Keyser, W. Va.	16	4	20	22	13
Parkersburg, W. Va.	15	4	19	21	12
Wheeling, W. Va.	16	4	20	22	13
Charlotte, N. C.	16	5	21	23	13
Hickory, N. C.	16	5	21	23	13
Mt. Airy, N. C.	16	5	21	23	13
Salisbury, N. C.	14	5	19	21	13
Charleston, S. C.	15	6	21	23	13
Columbia, S. C.	16	6	22	24	13

Note: 2c per gallon discount off t.w. price of gasoline to dealers and commercial consumers thru S. O. New Jersey territory.

CONTINENTAL OIL

Denver, Colo.	14	4	18	21	15.5
Pueblo, Colo.	14	4	18	21	15.5
Grand Junc., Colo.	18.5	4	22.5	25.5	19
Casper, Wyo.	16	4	20	23	14
Cheyenne, Wyo.	17	4	21	24	15.5
Butte, Mont.	20.5	5	25.5	28.5	20
Helena, Mont.	20.5	5	25.5	28.5	20
Salt Lake City, Utah	17.5	3½	21	24	17
Boise, Ida.	19.5	4	23.5	26.5	19
Twin Falls, Ida.	19.5	4	23.5	27.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA

Phoenix, Ariz.	14	4	18	22	20.5
Los Angeles, Cal.	16.5	3	19.5	22.5	15.5
Fresno, Cal.	17	3	20	23	17
San Francisco, Cal.	17	3	20	23	15.5
Reno, Nev.	21	4	25	28	19
Portland, Ore.	17.5	3	20.5	23.5	16.5
Seattle, Wash.	17.5	3	20.5	23.5	16.5
Spokane, Wash.	21.5	3	24.5	27.5	20.5
Tacoma, Wash.	17.5	3	20.5	23.5	16.5

Note: 4c per gal. discount to dealers off t.w. price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only.

S. O. LOUISIANA

Little Rock, Ark.	14	5	19	21	13
Alexandria, La.	‡15	4	‡19	21	†16
Baton Rouge, La.	14	4	18	20	†14.5
Lake Charles, La.	††16.5	4	††20.5	††22.5	†16
New Orleans, La.	*11	4	*15	15	†13
Shreveport, La.	15.5	4	19.5	21.5	†15
Lafayette, La.	**16	4	**20	**22	†14
Bristol, Tenn.	16	5	21	22	14
Chattanooga, Tenn.	15	5	20	20	14
Knoxville, Tenn.	15	5	18	20	16
Nashville, Tenn.	14	5	19	19	16
Memphis, Tenn.	15	5	20	22	12.5

Note: 2c per gallon discount off t.w. price of gasoline to dealers thru S. O. Louisiana territory.

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

‡Alexandria gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	13	5	18	19	15.5
Catlettsburg, Ky.	13	5	18	19	15.5
Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	16	5	21	23	15
Covington, Ky.	15	5	20	21	15.5
Clarksdale, Miss.	13	5	18	20	12.5
Gulfport, Miss.††	17.5	5	22.5	24.5	14
Jackson, Miss.	16	5	21	23	13
Natchez, Miss.	15.5	5	20.5	20.5	14
Vicksburg, Miss.	15.5	5	20.5	22.5	14
Birmingham, Ala.	15	4	19	21	13
Mobile, Ala.‡	16	4	20	22	15
Montgomery, Ala.*	17	4	21	23	16.5

Latest Changes in Tank Wagon Prices

Gasoline Changes

S. O. New Jersey—T.w. cut 1c, s.s. 2c, Salisbury, to 20c and 21c, respectively, including 5c tax, **Oct. 19.**

T.w. only cut 1c to 19c, Salisbury, **Oct. 24.**

Atlantic Refining—T.w. and s.s. up 2c, Erie, to 15c and 19c respectively, **Oct. 30.**

S. O. Ohio—T.w. up 1c, s.s. 2c, to state-wide schedule of 19c and 20c respectively, at these points on dates mentioned: Lima and Wapakoneta, **Oct. 28**; Ada, **Oct. 31**; Willard, **Nov. 1.**

T.w. cut 1c, s.s. 2c, both to 18c, at these points: Rawson, **Oct. 25**; Miller City, **Oct. 28**; and Cortland, **Oct. 31.**

T.w. cut 4c, s.s. 5c, Payne, both to 15c, **Oct. 29.**

S.s. only cut 1c, Van Buren, to 19c, **Oct. 25.**

T.w. up 1c, s.s. 2c, Belmont county, to state-wide prices of 19c and 20c, respectively, **Nov. 4.**

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Atlanta, Ga.	14	6	20	22	†16.5
Augusta, Ga.	14	6	20	22	†15.5
Macon, Ga.	17	6	23	25	†16.5
Savannah, Ga.	16	6	22	24	†15.5
Jacksonville, Fla.	16	6	22	24	14.5
Miami, Fla.	17	6	23	25	15.5
Tampa, Fla.	16	6	22	24	14.5
Pensacola, Fla.**	17	6	23	25	14.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. NEBRASKA

Omaha, Neb.	16.25	4	20.25	22.25	13.25
McCook	17.75	4	21.75	23.75	14.75
Norfolk	16.75	4	20.75	22.75	13.75
North Platte	17.75	4	21.75	23.75	14.50
Scottsbluff	17.75	4	21.75	23.75	14.25

S. O. INDIANA

Chicago, Ill.	16	3	19	20	13
Decatur, Ill.	16.2	3	19.2	20.2	13.1
E. St. Louis, Ill.	15.4	3	18.4	17.4	12.2
Joliet, Ill.	16.4	3	19.4	20.4	13.3
Peoria, Ill.	16.2	3	19.2	20.2	13.1
Quincy, Ill.	16.2	3	19.2	20.2	12.9
Indianapolis, Ind.	16.2	4	20.2	21.2	14.2
Evansville, Ind.	16	4	20	21	14
South Bend, Ind.	16.4	4	20.4	21.4	14.4
Detroit, Mich.	16.8	3	19.8	20.8	14.7
Grand Rapids, Mich.	16.7	3	19.7	20.7	14.6
Saginaw, Mich.	16.9	3	19.9	20.9	14.8
Green Bay, Wisc.	16.6	2	18.6	19.6	13.4
Madison, Wisc.	16.3	2	18.3	17.3	13.1
Milwaukee, Wisc.	16.1	2	18.1	19.1	12.9

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
La Cross, Wisc.	17.2	2	19.2	20.2	14
Minneapolis, Minn.	17.2	3	20.2	21.2	13.9
Duluth, Minn.	17.5	3	20.5	21.5	13.9
Mankato, Minn.	17.1	3	20.1	21.1	13.7
Des Moines, Ia.	16.5	3	19.5	20.5	13.3
Davenport, Ia.	16.5	3	19.5	20.5	13.3
Sioux City, Ia.	16.1	3	19.1	20.1	12.9
Mason City, Ia.	16.5	3	19.5	20.5	13.3
St. Louis, Mo.	*15.9	2	17.9	18.9	12.3
Kansas City, Mo.	†16.9	2	18.9	19.9	11.6
St. Joseph, Mo.	†16.5	2	18.5	19.5	12.2
Fargo, N. D.	18.9	3	21.9	22.9	15.9
Grand Forks, N. D.	19.2	3	22.2	23.2	16.2
Minot, N. D.	18.9	3	21.9	22.9	15.9
Pierre, S. D.	17	4	21	22	14.4
Huron, S. D.	17.3	4	21.3	22.3	14.7
Wichita, Kans.	14.8	3	17.8	18.8	11.8
Bartlesville, Okla.	14.5	4	18.5	19.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply. Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Ohio state-wide	15	4	19	20	13
Paulding County	15	4	19	20	11
Columbiana, Jackson, Meigs, Noble, Vinton, Washington, Monroe, Gallia and Jefferson Counties and *14 competitive pts.	14	4	18	18	13
At †6 Competitive Points	14	4	19	18	13
Van Buren	15	4	19	19	13
Bryan and Findlay	13	4	17	17	13
Payne	11	4	15	15	13

Note: Discount to dealers and commercial accounts generally thru Ohio is 2c per gal. off t.w. price with some exceptions.

†These 6 points are: Hicksville, Arlington, Midway, Mortimer, Mendon and Nevada.

*These 14 points are: Arcadia, Perrysburg, Fostoria, Urbana, Marion, St. Paris, Hamilton, Meeker, Ney, Miller City, Cortland, Rawson, St. Johns and Piqua.

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	4	16	19	13
Oklahoma City	13	4	17	20	10
Tulsa, Okla.	11	4	15	19	10
Fort Smith, Ark.†	11	†4	15	17	12
Little Rock, Ark.	14	5	19	21	13
Texarkana, Ark.*	13	*4	17	19	12
Dallas, Tex.	13	4	17	21	13
Fort Worth, Tex.	13	4	17	20	12
Houston, Tex.	9	4	13	17	11
San Antonio, Tex.	11	4	15	19	11
El Paso, Tex.	11	4	15	18	16

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

Greater New York City:					
Boroughs of Manhattan, Bronx, Queens & Kings	14	2	16	18	15
Borough of Richmond	15	2	17	19	15
Albany, N. Y.	16	2	18	20	15
Buffalo, N. Y.	16	2	18	20	14
Rochester, N. Y.	16	2	18	20	13
Syracuse, N. Y.	16	2	18	20	12
Boston, Mass.	16	2	18	20	15

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Florida, 1/8c on both; Georgia, 1/10c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only, per gallon; Iowa, 7/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which s tate or other states there are local inspection fees. done in some instances. In some cases in the above

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect Nov. 4, 1929

S. O. NEW YORK

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Augusta, Me	16	4	20	20	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	13

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	22	13
Philadelphia, Pa.	16	*	16	22	13
Allentown, Pa.	16	*	16	22	13
Erie, Pa.	15	*	15	19	13
Scranton, Pa.	16	*	16	22	13
Altoona, Pa.	16	*	16	22	13
Williamsport, Pa.	15	*	15	19	13
Dover, Del.	16	3	19	21	13
Wilmington, Del.	16	3	19	21	13
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	16	2	18	20	13
Providence, R. I.	16	2	18	20	13
Hartford, Conn.	16	2	18	20	14
New Haven, Conn.	16	2	18	20	15
Atlantic City, N. J.	14	2	16	18	13
Camden, N. J.	15	2	17	19	13
Trenton, N. J.	15	2	17	19	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	15	4	19	21	12
Hagerstown, Md.	12	4	16	18	13
Richmond, Va.	15	5	20	22	13
Wilmington, N. C.	15	5	20	22	13
Brunswick, Ga.	16	6	22	24	**15.5
Jacksonville, Fla.	16	6	22	24	14.5

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

*4-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	15.7	17.2	19
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**19.7	**21.2	*23
St. Louis	15.6	17.1	18.9
New York		16	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits

	(Solvent)
Tank Cars	
New York refineries	11.50–12.00
Philadelphia refineries	11.50–12.00
Tank Wagon or Steel Barrels	
New York City	16–18
New England	18–19
New Jersey	16–18
Pennsylvania	16–19

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Totonto	19.5	5	24.5	28	20.5
Ottawa	16.5	5	21.5	25	20.5
Cochrane	24.5	5	29.5	..	25.5
Ft. William	22.5	5	27.5	31	23.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	26	3	29	33	26
ALBERTA					
Edmonton	27.5	5	32.5	36	27.5
Calgary	23.5	5	28.5	32	23.5
BRITISH COLUMBIA					
Vancouver	23	3	26	30	24
QUEBEC					
Montreal	20.5	5	25.5	29	21
Quebec City	21.5	5	26.5	30	22
Three Rivers	21.5	5	26.5	30	22
NEW BRUNSWICK					
St. John	22	5	27	31	24
Moncton	22	5	27	31	24
NOVA SCOTIA					
Halifax	22	5	27	31	24
Sydney	22	5	27	31	24
PRINCE EDWARD ISLAND					
Charlottetown	22	5	27	31	24

Note: In districts surrounding these points 1c additional is added to city price.

FLOODLIGHT YOUR STATIONS
with Golden Glow Lantern-Floodlights

Lantern-Floodlight with glass panels removed, showing reflector mounted inside.

These Lantern-Floodlights serve the dual purpose of providing the ornamental effect of a lantern and floodlighting the entire station as well. They provide beautiful illumination without glare and are attractive day and night. Lantern-Floodlights are installed on your own property and controlled from your own meters. Please ask for Bulletin No. 273. We also manufacture a complete line of all aluminum projectors of highest quality.

ELECTRIC SERVICE SUPPLIES CO.

Home office and plant at 17th & Cambria Sts., PHILADELPHIA: District Offices at 111 No Canal St., CHICAGO; 50 Church St., NEW YORK; Bessemer Bldg., Pittsburgh; 88 Broad St., Boston; General Motors Bldg., Detroit; 316 N. Washington Ave., Scranton; Canadian Agents, Lyman Tube & Supply Company, Ltd., Montreal, Toronto, Vancouver.

Typical Complete Lantern-Floodlight Unit

"Burning Liquid Fuel"

LEARN real facts which have never been published before on the subject of burning liquid fuel, by W. N. Best, the recognized authority.

Send your order and check for $4 to—

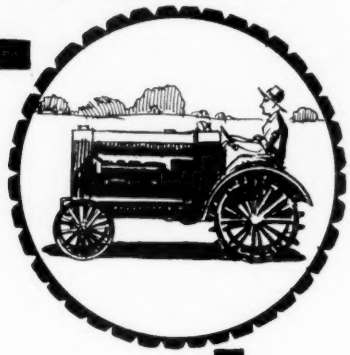
National Petroleum News
1213 W. 3rd Street Cleveland, Ohio

KEROSENE

All Gravities · Water White
TRACTOR FUEL

WILLOCK OIL CORPORATION
First National Bank Building · Phone Atlantic 3110
PITTSBURGH, PA.
52 Years Experience · It Counts

The Season is now on!
. . . for Quality Kerosene and Furnace Oil . . . .



SUPER KEROSENE—Our regular grade at Cyril, Oklahoma, now running 42/44 gravity, Tagliabue open cup flash not over 150 F., end point not over 560 F., double treated, water-white, doctor-sweet, with excellent burning test—a splendid kerosene for incubators, or for general burning, heating, power and refrigerating purposes.

ZERO FURNACE OIL—Made at Colorado, Texas, a 35/37 gravity, light straw gas oil, Cleveland open cup flash not over 175 F., Initial approximately 400 F., end point under 630 F., Zero cold test, sulphur under three-quarters of one per cent, fully treated, doctor sweet odor, shipped in clean cars—An excellent furnace oil that has stood the test of winter.

We solicit inquiries for spot shipments; also contracts covering buyer's requirements over winter months—guaranteeing prompt shipments.

Inquiries invited from our jobbing friends on COL-TEX ETHYL and COL-TEX REGULAR gasoline as well as our exclusive franchise on INDUSTRIAL NAPHTHAS.

ANDERSON-PRICHARD OIL CORPORATION
COL-TEX REFINING COMPANY

PRODUCERS AP REFINERS

OKLAHOMA CITY, OKLA.

Crude Oil Prices (in Effect Nov. 4, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(All Penna. Crude prices effective Oct. 1, 1929)

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District) *$3.05

Bradford District Oil in National Transit Lines (Bradford District) *3.05

Penna. Grade Oil in National Transit Lines (Other Pennsylvania) *3.05

Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) 3.00

Penna. Grade Oil in Eureka Pipe Lines (West Virginia) 2.90

Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district) 2.70

Corning Grade in Buckeye Pipe Lines (Ohio) (Effective May 22, 1929) 1.90

Corning, O., heavy grade (Effective May 22, 1929) 1.80

Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective May 22, 1929) 1.80

Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 29, 1929) $0.60

***Oil run prior to July 1, 1929 is $3.00 per bbl.**

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Oct. 7, 1929) $1.70

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon):

32-32.9	$1.25	39-39.9	$1.60
33-33.9	1.30	40-40.9	1.65
34-34.9	1.35	41-41.9	1.70
35-35.9	1.40	42-42.9	1.75
36-36.9	1.45	43-43.9	1.80
37-37.9	1.50	44 and above	1.85
38-38.9	1.55		

(Posted by Pure Oil Co.)

Midland, Midland County $1.70

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective May 21, 1929

Wooster	$1.90	Princeton	$1.75
Lima	1.80	Illinois	1.75
Waterloo	1.20	Plymouth	1.28
Indiana	1.57	West Kentucky	1.83

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia $2.20

Oil Springs 2.27

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Pairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective May 20, 1929

Below 25	$0.85	35-35.9	$1.40
25-25.9	0.90	36-36.9	1.45
26-26.9	0.95	37-37.9	1.50
27-27.9	1.00	38-38.9	1.55
28-28.9	1.05	39-39.9	1.60
29-29.9	1.10	40-40.9	1.65
30-30.9	1.15	41-41.9	1.70
31-31.9	1.20	42-42.9	1.75
32-32.9	1.25	43-43.9	1.80
33-33.9	1.30	44 and above	1.85
34-34.9	1.35		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

May 20, 1929, same schedule as Prairie in above fields.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

May 20, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.70	29-29.9	0.95
26-26.9	0.75	30-30.9	1.05
27-27.9	0.85	31-31.9	1.15
28-28.9	0.90		

May 20, 1929, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in West Texas which see.

Iatan district	$0.93
Corsicana heavy	0.80
Luling	0.90
Mirando	0.90

Carter Oil Co.

(Oklahoma and Kansas)

May 20, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective May 20, 1929

Hutchinson and Carson Counties:

Below 32	$0.90	38-38.9	$1.25
32-32.9	0.95	39-39.9	1.30
33-33.9	1.00	40-40.9	1.35
34-34.9	1.05	41-41.9	1.40
35-35.9	1.10	42-42.9	1.45
36-36.9	1.15	43-43.9	1.50
37-37.9	1.20	44 and above	1.55

Wheeler County:

Below 30	$0.90	37-37.9	$1.30
30-30.9	0.95	38-38.9	1.35
31-31.9	1.00	39-39.9	1.40
32-32.9	1.05	40-40.9	1.45
33-33.9	1.10	41-41.9	1.50
34-34.9	1.15	42-42.9	1.55
35-35.9	1.20	43-43.9	1.60
36-36.9	1.25	44 and above	1.65

Gray County:

Below 29	$0.90	37-37.9	$1.35
29-29.9	0.95	38-38.9	1.40
30-30.9	1.00	39-39.9	1.45
31-31.9	1.05	40-40.9	1.50
32-32.9	1.10	41-41.9	1.55
33-33.9	1.15	42-42.9	1.60
34-34.9	1.20	43-43.9	1.65
35-35.9	1.25	44 and above	1.70
36-36.9	1.30		

Above prices met by The Texas Co. and Magnolia on May 20.

WEST TEXAS

Humble Oil & Refining Co.

Effective May 20, 1929

Winkler, Crane, Upton, Crockett, Howard and Pecos Counties, also Lea County, N. Mex.

Below 25	$0.70	25-25.9	$0.74
26-26.9	0.78	32-32.9	1.02
27-27.9	0.82	33-33.9	1.06
28-28.9	0.86	34-34.9	1.10
29-29.9	0.90	35-35.9	1.14
30-30.9	0.94	36 and above	1.18
31-31.9	0.98		

May 20, 1929, The Texas Co. posted same prices as Humble in Crane, Upton, Pecos and Winkler., and Magnolia in Crane, Upton, Winkler, Glasscock, Howard and Mitchell.

SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective May 20, 1929

Mirando	$0.90
Salt Flat	1.25

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective May 22, 1929

Below 28	$1.00	36-36.9	$1.45
28-28.9	1.05	37-37.9	1.50
29-29.9	1.10	38-38.9	1.55
30-30.9	1.15	39-39.9	1.60
31-31.9	1.20	40-40.9	1.65
32-32.9	1.25	41-41.9	1.70
33-33.9	1.30	42-42.9	1.75
34-34.9	1.35	43-43.9	1.80
35-35.9	1.40	44 and above	1.85

**Cotton Valley, below 36, $0.85. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.85
do 24 and above	1.00
Bellevue	1.30
*Urania, La.	1.10
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

May 20, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.85; 25-25.9, $0.90; 26-26.9, $0.95; 27-27.9, $1.00.

May 22, Magnolia, Atlantic, Shreveport-Eldorado Pipe Line, Louisiana Oil, and Gulf Companies met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective May 22, 1929

Below 28	$0.90	30-30.9	$1.02
28-28.9	0.94	31-31.9	1.06
29-29.9	0.98	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective May 20, 1929

Grades A	$1.30	29-29.9	$1.30
Grades B:		30-30.9	1.33
Below 25	$1.15	31-31.9	1.36
25-25.9	1.18	32-32.9	1.39
26-26.9	1.21	33-33.9	1.42
27-27.9	1.24	34-34.9	1.45
28-28.9	1.27	35 and above	1.48

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only

Three Oil Companies Add To Marine Fleets

CLEVELAND, Nov. 2.—Announcement of additions to marine fleets of the standard Oil Co. of Indiana, the Tide Water Oil Co., and the Sinclair Consolidated Oil Co. are made in the November issue of *Marine Review*.

Standard of Indiana has ordered a tanker similar to the Robert W. Stewart which was completed in April 1928. The new tanker, like the Stewart, is to have a cargo capacity of 2,071,780 U. S. gallons. The order was placed with the Manitowoc Shipbuilding Co., Manitowoc, Wis.

Through the Sinclair Refining Co. the Sinclair Consolidated Oil Co. has signed contracts with the Bethlehem Shipbuilding Corp. for two 8400 deadweight-ton steel tankers for transporting refined products from Gulf ports to terminals on the Atlantic and Gulf seaboard.

Two self-propelled coastal barges for delivering gasoline were ordered from the Bethlehem company also by Sinclair.

The tankers will be named Harry F. Sinclair, Jr., and Virginia H. F. Sinclair after the two children of H. F. Sinclair, chairman of the board.

Tide Water Oil Co. is adding a second coastwise diesel-electric tanker for transporting gasoline and lubricating oil. The first tanker was launched early this year and the second boat, to be started soon, is to be a duplicate. Both tankers carry about 20,000 barrels of gasoline and about 55,000 gallons of lubricating oil. Lubricating oil is carried in individual tanks in the forward hold space.

Galveston Oil Depot Planned by Shell

HOUSTON, Oct. 31.—Construction of an oil depot at Galveston, to include storage tanks, pump house, warehouse and other units, is proposed in an application filed with the city commissioners by the Shell Petroleum Corp. The petition was signed by G. H. Loehr of Houston, in charge of the developing section of the distributing department in South Texas. It is proposed to erect five tanks of 18,000 gallons capacity, a 20 x 40 foot steel warehouse and a 10 x 10 foot pumphouse, surrounded by six foot wire fence, on property located between Forty-fifth and Forty-sixth streets and Avenues E and F at Galveston. The petition was referred to city authorities.

WILDCAT STUFF

TAKING a chance may be perfectly alright in Wall Street but not on your Lubricating Oil requirements. You do not want to gamble on the oils you are going to use. You want to be dead sure.

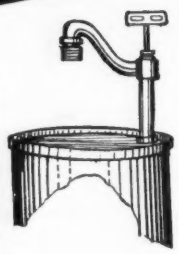
Inquire of us for your Petroleum Oil needs. We have the usual line of Gasoline, Kerosene, Fuel Oil, Cylinder Stocks, Neutrals, Bright Stock and Scale Wax.

Guaranteed 100% PURE PENNSYLVANIA OIL

SUPERIOR OIL WORKS
MUTUAL REFINING CO.
Warren, Pa.

You'll Sell More Oil Than Ever Before

Show your "drive-in" customers how they can save money buying in bulk. Sell them by the *drum* instead of by the gallon.



KWART KWICK
Home Oil Pump

Fits any drum or barrel—especially designed for the private user. Lowest-priced fool-proof home oil pump on the market. Works equally well with oil, gas, etc. Strongly built of brass, steel and cast iron—nothing to get out of order. Special quantity discounts to oil companies.

By distributing this pump with bulk sales, you can increase your oil volume 100% to 200%. Others are doing it. Mail coupon today for complete information and prices.

Kwart Kwick Dep't
VIKING PUMP CO.
Cedar Falls, Iowa

MAIL TODAY

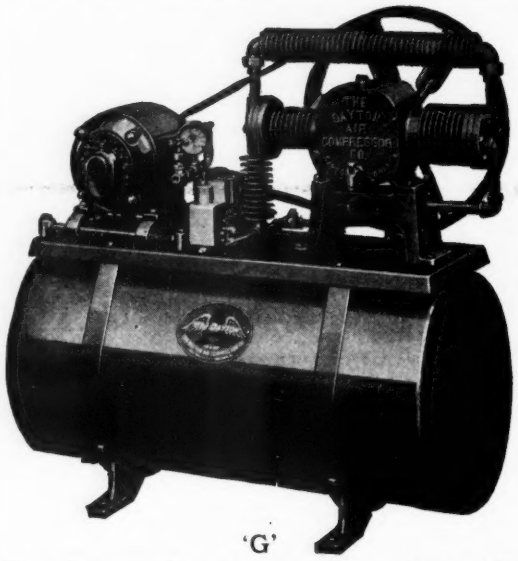
Viking Pump Co., Dep't. B
Please send details and prices on your Kwart Kwick Pump.

Name.....

Town.....

State.....

TWO EXAMPLES OF DAYTON MODELS



'G'

Here is a two-stage—the Dayton "G" built in 5 capacities, up to 12 cubic feet of air per minute. The only two-stage compressor in the world built with

No connecting rod—
No cotter pins—
No crosshead pins—
No bolts—

Nothing to break loose and score the cylinder. Economical in cost and in operating expense.

Get a "G" Bulletin or a catalog of all models. Send a card today.

For Super Service or 'One Stop' Stations buy one of the three models "A"

A-2 has a 5 H. P. Motor, a capacity of 23 Cu. Ft. of air per minute. Installed in 90" of floor space.

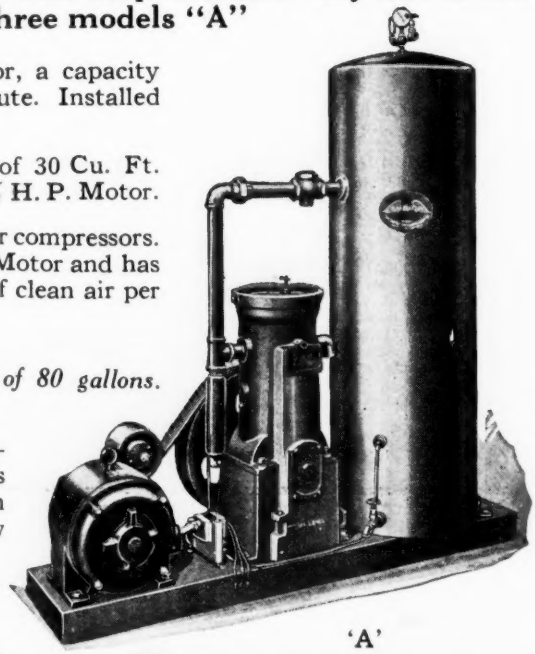
A-2½ with a capacity of 30 Cu. Ft. of air per minute, has a 7½ H. P. Motor.

A-3 is the mogul of all air compressors. Equipped with a 10 H. P. Motor and has a capacity of 52 Cu. Ft. of clean air per minute.

All tanks have a capacity of 80 gallons.

Don't buy any air compressor where volume is needed until you get an 'A' Bulletin and learn how far your dollar will go.

Write today.



'A'

DAYTON AIR COMPRESSORS

425 Valley St. **Dayton, Ohio**

Gasoline And Other Motor Fuels

by Ellis and Meigs, is a book which gives a complete survey of the field and a description of practically every process of making gasoline and most other motor fuels of promise or prominence.

The price of the book is $10. Just send us your check and we will mail a copy of it to you.

National Petroleum News, 1213 W. Third St., Cleveland, Ohio

Crude Oil Prices (in Effect Nov. 4, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective May 20, 1929

Grades A	$1.30	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.49	40-40.9	$1.69
36-36.9	1.53	41-41.9	1.73
37-37.9	1.57	42-42.9	1.77
38-38.9	1.61	43-43.9	1.81
39-39.9	1.65	44 and above	1.85

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective May 20, 1929)

‡Salt Creek 29-29.9	$1.10
" " 30-30.9	1.15
" " 31-31.9	1.20
" " 32-32.9	1.25
" " 33-33.9	1.30
" " 34-34.9	1.35
" " 35-35.9	1.40
" " 36-36.9	1.45
" " 37 and above	1.50
Elk Basin	1.65
Grass Creek light	1.65
Big Muddy	$1.43
Lance Creek	1.68
Rock Creek	1.40
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.65
‡Cat Creek, Mont.	1.65
Sunburst, Mont.	1.75
‡Hogback, N. Mex.	1.70
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach	Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon †Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14-14.9	....	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .40
15-15.9	....	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.40
16-16.9	....	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.40
17-17.9	....	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.40
18-18.9	....	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.40
19-19.9	$.40	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.40
20-20.9	.40	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.40
21-21.9	.40	.89	.89	.89	....	....	.88	.88	.40	....	.74	.74	.74	.74	.85	55°	.86	.40
22-22.9	.40	.93	.93	.93	....	....	.91	.91	.40	....	.80	.80	.80	.80	.90	gravity	.87	.40
23-23.9	.40	.97	.97	.97	....	....	....	.94	.40	....	.85	.85	.85	.85	.95	and	.90	.40
24-24.9	.40	1.01	1.01	1.01	1.01	....	....	.97	.40	....	.90	.90	.88	.88	.98	over	.94	.40
25-25.9	.60	1.05	1.05	1.05	1.05	....	....	1.00	.40	....	.95	.95	.91	.91	1.01	....	.98	.60
26-26.9	.60	1.09	1.09	1.09	1.09	....	....	1.04	.40	....	1.00	1.00	.94	.94	1.04	....	1.02	.60
27-27.9	.60	1.13	1.13	1.13	1.13	....	....	1.08	.40	....	1.05	1.05	.98	.97	1.07	....	....	.60
28-28.9	.60	1.17	1.17	1.17	1.17	....	....	1.12	.40	....	1.10	1.10	1.02	....	1.10	....	....	.60
29-29.9	.60	1.21	....	1.21	1.21	....	....	1.16	.60	....	1.16	1.16	1.06	....	1.13	....	....	.60
30-30.9	.60	1.25	....	1.25	1.25	....	....	1.20	.60	....	1.22	1.22	1.10	....	1.16	....	....	.60
31-31.9	.60	1.30	....	1.30	1.30	....	....	....	.60	....	1.28	1.28	1.14	....	....	....	....	.60
32-32.9	.60	1.35	....	....	1.35	....	....	....	.60	....	1.34	1.34	1.18	....	....	....	....	.60
33-33.9	....	....	....	....	1.41	....	....	....	.60	....	1.40	1.40	1.22	....	....	....	....	.60
34-34.9	....	....	....	....	1.47	$1.16	....	....	.60	....	....	1.46	1.26	....	....	....	....	.60
35-35.9	....	....	....	....	1.53	1.22	....	....	.60	....	....	1.52	1.30	....	....	....	....	.60
36-36.9	....	....	....	....	1.59	1.28	....	....	.60	....	....	....	....	....	....	....	....	....
37-37.9	....	....	....	....	1.65	1.34	....	....	.60	....	....	....	....	....	....	....	....	....
38-38.9	....	....	....	....	1.71	1.40	....	....	.60	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	....	1.77	1.46	....	....	.60	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Richfied posted only to 30–30.9 at $1.25.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Nov. 4	Oct. 28
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$0.90-1.00	$0.90-1.00
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of cwt.	$3.10-4.00	$3.50-4.50
Liquid Chlorine, tank cars, wks. lb.	3.50-5.00	3.50-5.00

Compounders' Supplies

	Nov. 4	Oct. 28
Vegetable Oils		
Linseed carloads, spot lb.	15.30	15.50
Tanks, spot	14.50	14.70
Soya Bean, Tanks, coast, lb.	10.50-11.00	10.50-11.00
Oleic Acid		
Distilled, tanks lb.	9.75	9.75
Distilled, bbls. lb.	10.625	10.625
Saponified, tanks lb.	9.75	9.75
Saponified, bbls. lb.	10.625	10.625
Lard Oils		
Prime Winter Strained lb.	15.25	15.25
Extra Winter Strained lb.	12.75	12.75
Extra lb.	12.50	12.50
Extra No. 1 lb.	12.00	12.00
No. 1 lb.	11.75	11.75
No. 2 lb.	11.50	11.50
Tallow oil lb.	11.00	11.00
Neatsfoot Oil		
Pure, bbls. lb.	14.50	14.50
Extra, bbls. lb.	12.25	12.25
No. 1 bbls. lb.	12.00	12.00
Cold Pressed lb.	12.50	12.50
Fish Oils		
Menhaden Oil		
Light Pressed gal.	70	70
Light Pressed, tank cars, N. Y. gal.	58–60	58–60
White bleached gal.	76	76
Yellow bleached gal.	71	71
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y. gal.	53	53
Steam distilled turpentine, Savannah gal.	53	53
Gum turpentine, N. Y. gal.	56.50	56.50
Gum turpentine, f.o.b. cars Savannah gal.	50.50	50.50
Wood Rosin F, N. Y. bbl.	$8.05	$8.05
Wood Rosin F, Savn'h. bbl.	$7.25	$7.25
Gum Rosin B, N. Y. bbl.	$9.00	$9.00
Gum Rosin B, f.o.b. cars Savannah bbl.	$8.15	$8.15
Rosin oil, pure gal.	61	61
Rosin oil, compounded gal.	51	51
Pine Tar		
Kiln burnt bbl.	$13.00-14.00	$13.00-14.00
Retort bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	59–66	59–66

Auto Production Continues Decline

PHILADELPHIA, Nov. 2.—*Automotive Industries* this week said:

"As the automobile industry rounds out the last few days of October, the downward trend of production continues and it is doubtful if the total production for the month, taking the United States and Canada as a whole, will reach 400,000. Plants will be closing soon, as is usual for the end of the year. The industry produced 415,000 passenger cars and trucks during October, 1928.

"Ford production may emphasize this recession trend if the announced schedule of this company is carried out. It is expected that Ford will produce 170,000 units during October, which will leave but 191,000 to be produced during the months of November and December to bring the year's production to 2,000,000 as announced. This will effect a drop of nearly 50 per cent for the remainder of the year.

"Oakland has shut down its plant and is in anticipation of next year's production. Oldsmobile and Viking plants will close before December 1, and a number of other manufacturers are planning to do so.

"It is believed in informed quarters, however, that total production for the year in the United States and Canada will be about 5,500,000 units, as predicted some months ago by *Automotive Industries*. Generally favorable sales in all parts of the country bear this out. In spite of the usual seasonal decline, sales executives report that dealer deliveries are continuing at satisfactory levels."

Commercial Bribery Held Unfair Trade Practice

WASHINGTON, Nov. 2.—In the nine federal judicial districts of Ohio, Kentucky, Michigan and Tennessee "commercial bribery" has been judicially recognized as an unfair method of competition. The United States Circuit Court of Appeals, sitting at Cincinnati, has affirmed an order of the Federal Trade Commission entered against the Grand Rapids Varnish Co., Grand Rapids, Mich., prohibiting the practice known as commercial bribery. The varnish company consented to the entry of the decree making good the order of the trade body against it. Failure of the varnish company to observe the order subjects it to punishment under the unfair methods of competition law or for contempt of court.

As to whether commercial bribery is an unfair method of competition in other parts of the United States has not yet been judicially determined. But until the decision of the circuit court of appeals for the sixth circuit comprising the states named is overturned by the Supreme Court of the United States, if ever, commercial bribery will be an unfair method of competition. The action of the court at Cincinnati probably will influence courts in other circuits.

The court directs the varnish company to cease and desist "from directly or indirectly secretly giving, or offering to give, employees of its customers or prospective customers, without the knowledge or consent of their employers, as an inducement to cause their employers to purchase or to contract to purchase, from the respondent, varnish and kindred products, or to influence such employers to refrain from dealing, or contracting to deal, with competitors of respondent, without other consideration therefor, money or anything of value."

The paint company, at first denied the jurisdiction of the court but the American Paint & Varnish Association and the National Association of Purchasing Agents backed the commission in the court. When all its efforts to get the case out of the court failed, the respondent consented to the entry of the decree. It was accused of giving money to employees of buyers of paints and varnish to influence them in favor of its products.

"Standard Oil" in Name Forbidden by Court

RICHMOND, Va., Nov. 2.—A temporary injunction has been issued in the United States district court here restraining the Standard Oil Co. of Virginia from continuing business operations under the title "Standard Oil" until further order of the court.

The injunction was sought by the Standard Oil Co. of New Jersey, which, according to its bill of complaint, has been doing business in the State of Virginia continuously since 1906. The Standard Oil Co. of Virginia was incorporated two years ago in New York and in September, 1929, in Virginia.

While the bill of complaint listed Attorneys W. W. Crump, R. Grayson Dashiel and A. C. Nunnally, all of Richmond, as the incorporators of the Standard Oil Co. of Virginia, it was explained by Mr. Dashiel that the actual incorporators are business men of New York. The local incorporators will have no further connection with the company, Mr. Dashiel said, except in a legal way if the occasion arises.

All the stock in the Virginia company is said to be held by residents of New York, with the capitalization estimated at $100,000. No actual business had been engaged in, but it was understood that the company planned to construct terminal facility plants at Richmond and Norfolk.

The hearing of the injunction petition brought out that the word "Standard" is the trade-mark under which the Standard Oil Co. of New Jersey was incorporated. Counsel for the petitioner declared that use of the word in forming the business title of another company is unlawful and discriminatory.

In its bill of complaint, the New Jersey corporation stated that it would be unfairly and unlawfully deprived of the valuable good will now attached to its corporate name, as well as certain trade and business.

Counsel for the New Jersey concern argued that the public was being deceived by the similarity of the two business titles. He contended that customers would be misled to believe they were dealing with the older firm while trading with the other.

The preliminary injunction granted here was the forerunner of actions now under way in other states. Similar petitions have been presented in the district courts of South Carolina and West Virginia, where the incorporators of the Standard Oil Co. of Virginia have organized corporations known respectively as the Standard Oil Co. of South Carolina and the Standard Oil Co. of West Virginia.

The injunction issued here further provided that the Virginia corporation "is restrained from using any name so closely resembling the corporate name of the complainant, in sound or appearance, as to lead to confusion or uncertainty, and under such corporate name from engaging in any businesses or activities set out in the certificate of incorporation of the Standard Oil Co. of Virginia."

Humble Now Marketing In East Texas

HOUSTON, Nov. 2.—Humble Oil & Refining Co. has entered the East Texas marketing field and is building service stations at Jacksonville and Palestine, among other towns that may be conveniently supplied from its refinery adjacent to Boggy Creek development.

The refinery is a small one, near the Boggy Creek salt dome field, which straddles the Anderson-Cherokee county line and has been developed on the percentage plan by Humble for account of itself and its partner, the Rio Bravo Oil Co., Southern Pacific subsidiary. Gasoline deliveries will be made to points within a radius of 50 miles of the plant in tank trucks.

NILES, Mich.—Winter & Winter, distributors of Sinclair products in southwestern Michigan, has changed its name to the Southwestern Oil Co., Inc.

Skilled Supervision

Guarantees the Quality of Gulf Products

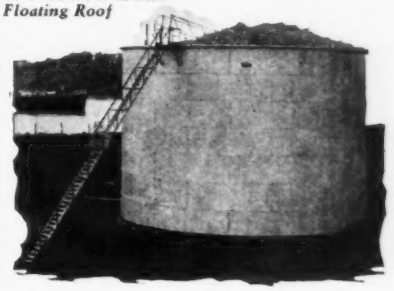
COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

60 Ft. Dia. tank with Floating Roof



Marketing Tanks with Wiggins Roofs

It is not necessary to stand evaporation loss just because you are a marketer. You can stop this loss just like the refiner and the producer does; by equipping your tanks with Wiggins Roofs.

Ask for quotations on Wiggins Roofs for your present tanks (stating diameters) and buy new tanks fully equipped.

Chicago Bridge & Iron Works

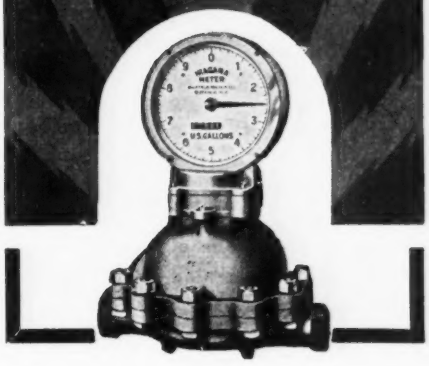
Chicago	2125 Old Colony Bldg.
New York	3145 Hudson Terminal Bldg.
Cleveland	2206 Union Trust Bldg.
Boston	1516 Consolidated Gas Bldg.
Philadelphia	1614 Jefferson Bldg.
Dallas	3339 Magnolia Bldg.
Atlanta	1050 Healey Bldg.
San Francisco	1060 Rialto Bldg.

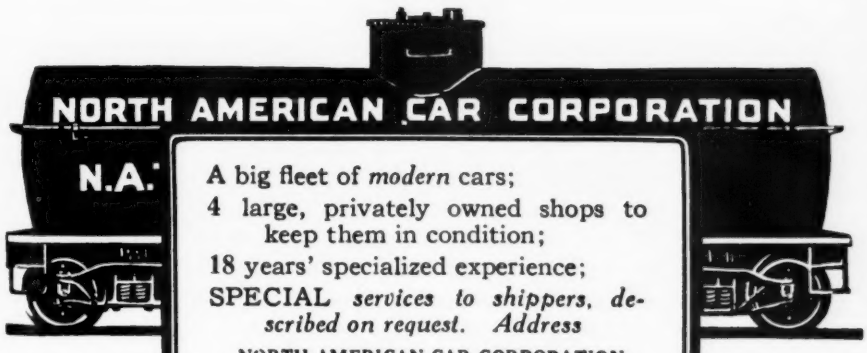
DEPENDABILITY

The Niagara meter never forgets—never jots down wrong totals—never delivers uncounted gallons of gasoline or oil that cut into profits. If the Niagara registers 50, fifty gallons have gone through—if 50,000, fifty thousand gallons have been delivered, and recorded so they'll be paid for. It is accurate.

The Niagara installed today is installed for years from now—its dependability is permanent. It is "rugged" structurally and simple mechanically. Send today for the new catalog of these familiar meters.

BUFFALO METER COMPANY
2889 Main Street
Buffalo, N. Y.





A big fleet of *modern* cars;
4 large, privately owned shops to keep them in condition;
18 years' specialized experience;
SPECIAL *services to shippers, described on request. Address*

NORTH AMERICAN CAR CORPORATION
327 S. LaSalle St., Chicago, Ill.
Tank Cars for Lease. Domestic and Export Terminals Chicago, Tulsa, New Orleans.

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Nov. 2 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅝	17½	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 29	28,000	24	25	†17½	24½	0
85	51¼	64¾	15	(sh) 209,180	N.P.	American Republics Corp.	....	.....	19,000	29⅝	29⅝	†15	25⅛	— 2⅜
53⅜	37½	47¼	40½	$56,000,000	$25	Associated Oil	50cQ	Sept. 30, 29	40	44½	44½	43¾	43¾	— 1¼
62½	50	77⅛	30	50,000,000	25	Atlantic Refining	‡25cQ	Sept. 15, 29	394,000	49⅝	50⅜	†30	46⅞	— 1⅜
53	20	49½	20	47,261,125	25	Barnsdall Corp. A	‡50cQ	Aug. 6, 29	144,000	27¾	31	†20	27½	— ⅜
51⅜	20	49	38⅛	300,525	25	do B	‡50cQ	Aug. 6, 29	.....	.....	.....	.....	.....	.....
24½	12¼	32⅞	17	(sh) 956,075	N.P.	Beacon Oil	....	.....	14,000	23	23	†17	20⅞	— 2⅜
36	25¼	34½	25	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	10	29⅝	29⅝	29⅝	29⅝	— ⅜
.....	.....	37¾	23	(sh) 4,634,163	N.P.	Continental Oil (Delaware)	....	.....	169,200	31¾	31⅞	†23	27¼	— 4⅞
94⅞	68	94¾	47	21,031,400	100	General Asphalt	.....	.....	28,500	64¼	64¼	†47	54	—10⅛
141	110⅜	138	104½	6,628,200	100	do pfd	$1.25Q	Sept. 3, 29	.....	.....	.....	.....	.....	.....
167	79	109	23	25,000,000	100	Houston Oil	....	.....	30,600	65	65	†23	49¾	—16¼
38⅝	21¾	39¼	17¾	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Oct. 31, 29	77,600	27¼	27¼	†17¾	24⅞	— 2⅝
39⅝	9	53	13	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	118,400	27¼	27¼	†13	24½	— 2½
37¼	8½	51¼	11½	4,550,110	10	do ctfs	.....	.....	60,100	25⅛	25⅛	†11½	22¾	— 2¼
185	140	165	160	1,977,700	100	do pfd new	$1.75Q	Oct. 1, 29	.....	.....	.....	.....	.....	.....
39⅛	27⅛	38⅜	26	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	1,900	27	27	26	26⅞	— 2⅜
19¾	9⅜	18	7	(sh) 1,187,298	N.P.	Louisiana Oil Refining	....	.....	44,800	10½	10⅝	†7	10	— ½
96	78	100¼	88⅞	$4,000,000	$100	do pfd	$1.62½	Aug. 15, 29	190	....	90⅞	†88⅞	88⅞	— 1½
25½	12½	18½	11¼	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	600	11¾	11¾	†11¼	11¼	— ¾
360	250	295	202	$45,942,800	$100	Mexican Petroleum	$3Q	Oct. 20, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Oct. 20, 29	.....	.....	.....	.....	.....	.....
73	4⅜	69⅜	9¼	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15, 24	87,000	19¾	20	12⅛	18	— 2
44½	25⅛	39⅞	23½	(sh) 1,857,461	N.P.	Mid-Continent	50cQ	Aug. 15, 29	101,200	30⅛	30½	†23½	29⅜	— ¾
120½	103¼	121	120¼	$6,718,000	$100	do pfd	$1.75Q	Sept. 1, 29	.....	.....	.....	.....	.....	.....
7⅜	2⅜	5⅛	1	23,849,720	10	Middle States	....	July 1, 23	43,000	1¾	1⅞	1½	1⅝	— ⅛
5⅞	1½	3⅝	⅞	5,950,500	10	do ctfs	....	.....	18,500	1⅜	1½	†⅞	1⅜	— ⅛
2¼	1	1½	⅝	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	38,800	1	1	†⅝	⅞	— ⅛
55½	38¼	69	40¼	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	21,900	64	64	50	61	— 3¼
58⅞	37⅜	69¼	40½	121,101,400	50	do B	....	Oct. 20, 27	214,200	64	64½	50	62	— 2⅜
28⅝	15½	17½	13½	(sh) 400,000	N.P.	Pan American Western B	....	Jan. 30, 27	.....	.....	.....	.....	.....	.....
21¾	11½	15¼	5	(sh) 199,370	N.P.	Panhandle P. & R.	....	.....	5,300	5⅞	6⅝	5	6	+ ½
106¼	70	76	47½	$2,935,200	$100	do pfd	.....	July 2, 23	500	53⅛	53⅛	53	53	— 2
53⅞	35¼	47	27	(sh) 2,406,803	N.P.	Phillips Petroleum	37½cQ	Oct. 1, 29	109,500	37⅛	37⅜	†27	34⅞	— 2¼
5¼	½	3⅜	1	$29,622,925	$25	Pierce Oil Corp	....	.....	22,100	1½	1¾	†1	1⅜	— ⅛
50	16¼	51½	20	15,000,000	100	do pfd	....	Feb. 1, 22	1,600	35½	35½	†20	25	—10
6⅝	3½	5⅞	½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	35,100	3⅜	3⅜	†½	3¼	— ⅛
64⅝	59½	65⅝	40½	$60,636,450	$25	Prairie Oil & Gas	‡50cQ	Sept. 30, 29	33,500	50¾	50¾	†40½	50	— ⅛
.....	.....	65	45	101,250,000	25	Prairie Pipe Line	‡75cQ	Sept. 30, 29	46,900	58⅝	58⅝	†45	57⅞	— ⅝
29⅞	16	25⅞	4	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	8,100	8¼	8¼	7	7½	— 2
49⅝	41	46¾	27	2,845,350	50	do pfd	.....	May 1, 25	500	....	36	30	30	— 4
31¼	19	30¾	20⅛	75,959,255	25	Pure Oil Co.	37½cQ	Sept. 1, 29	109,600	26⅜	26¾	†20⅛	25	— 1½
119	108	116	108¼	13,000,000	100	do 8% pfd	$2Q	Oct. 1, 29	510	....	112⅞	†108¼	111	— 1½
56	23½	49⅝	20	47,127,725	25	Richfield Oil	50cQ	Aug. 15, 29	91,100	32⅞	32⅞	24⅛	29	— 3½
.....	.....	42½	15	(sh) 1,200,000	N.P.	Rio Grande Oil Co.	‡$1S.A.	July 25, 29	55,100	25⅜	25⅜	18	23¾	+ ¼
64	44⅝	64	43⅛	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.873	Aug. 10, 29	169,100	54⅜	55⅛	†43⅛	55	— 4
57½	39⅜	55¾	43	(sh) 65,203,000	£2	Shell Transport & T.	$1.447	July 23, 29	.....	.....	.....	.....	.....	.....
39⅜	23¼	31⅜	19	12,254,979	N.P.	Shell Union Oil	35cQ	Sept. 30, 29	89,100	25½	25½	†19	24⅞	— 1½
27¼	18⅛	40⅛	18⅛	$8,357,280	$10	Simms Petroleum	40cQ	Sept. 14, 29	61,100	24	25⅝	20	25½	+ ½
46⅝	17⅜	45	22½	5,494,095	N.P.	Sinclair Consolidated	‡50cQ	Oct. 15, 29	472,900	31	31	†22½	29	— 2
110	102½	111	103	$16,025,200	$100	do pfd	$2Q	Aug. 15, 29	2,500	109½	109½	†103	105	— 2½
42⅝	25	46½	28	27,396,590	25	Skelly Oil Co.	50cQ	Sept. 16, 29	63,300	35¼	35¾	†28	32¼	— 2¾
80	53	81⅞	51½	(sh) 13,016,435	N.P.	S. O. California	62½cQ	Sept. 16, 29	135,900	70	70	†51½	67¾	— 2
59¾	37⅜	83	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Sept. 16, 29	678,100	72¾	72¾	50	70¼	— 2½
45½	28⅜	48⅛	32	434,094,575	25	S. O. New York	40cQ	Sept. 16, 29	208,900	40	40	†32	38⅜	— 1¼
77	31½	84¾	57	(sh) 1,297,847	N.P.	Sun Oil	25cQ	Sept. 16, 29	15,900	73⅛	73⅛	62	69⅞	— 3⅜
110	100	105½	100	$5,000,000	$100	do pfd	$1.50Q	Sept. 1, 29	390	....	104½	100½	103	— 1½
14¼	2½	24	7⅝	(sh) 1,304,698	N.P.	Superior Oil Corp.	....	Dec. 20, 20	26,900	14	14	†7⅝	10⅝	— 3⅜
74¾	50	71⅞	50½	$211,082,925	$25	The Texas Corp.	75cQ	Oct. 1, 29	191,100	58⅛	58⅝	†50½	57¾	— 1
26⅜	12⅛	23⅞	9¾	8,380,340	10	Texas Pacific Coal & Oil	2½%	Sept. 30, 29	42,900	14⅜	14⅜	†9¾	12⅜	— 1¼
41½	19⅝	40	25⅛	(sh) 2,179,275	N.P.	Tide Water Oil Co.	20cQ	Sept. 30, 29	.....	.....	.....	.....	.....	.....
100⅛	86¾	97½	88⅜	$20,321,000	$100	do 5½% pfd	$1.25Q	Aug. 15, 29	800	91¾	91¾	†88⅜	89½	— 1¾
25	14¾	23½	12	(sh) 4,877,976	N.P.	Tide Water Associated	.....	Aug. 1, 27	116,500	15¾	16¾	†12	14⅜	— 1½
91¾	81⅞	90⅞	80	$72,989,200	$100	do pfd	$1.50Q	Oct. 1, 29	2,200	84	84	†80	84	0
14½	6¾	15¼	5⅛	(sh) 3,842,029	N.P.	Transcontinental Oil	....	.....	469,700	9¼	9½	†5⅛	8¾	— ¾
58	42¾	54½	43⅛	$40,858,375	$25	Union Oil of California	50cQ	Aug. 10, 29	42,600	51⅞	51⅞	43½	47¾	— 1¾
128⅛	110	163¾	121⅞	31,101,200	100	Union Tank Car Co.	$1.25Q	Sept. 3, 29	2,600	140	147	130	147	+ 7
44⅞	26	42⅞	15	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Oct. 1, 29	31,500	23⅞	25	15½	23½	+ ⅜
38	20⅛	38	25	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 21, 29	10,600	31½	33	25	33	— 1¼
22⅛	17¼	29¾	13½	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	10,500	18¼	18¼	13½	15	— 4

*New High †New Low XEx-Dividends ‡Also Extras s-Stock Total Sales 4,988,540

Pittsburgh Stock Exchange

Transactions Week Ended Oct. 31, 1929

	Sales	High	Low	Last	Change
Ark. Nat. Gas	13,317	16	8⅛	15¼	— ¾
do pfd	5,851	8⅛	7	7¾	— ⅜
Devonian Oil	780	13	9	11	—2
Dixie Gas & Util. pfd	460	80	74	80	0
Lone Star Gas	45,342	59	†28	40¼	—9¾
Pet. Explor	100	30½	30½	30½	+ ½
Plymouth Oil	5,585	28	23½	28	+2
Shamrock Oil & Gas	4,085	19	15	16	+1⅞
Wiser Oil	100	16	16	16	+1⅜

†New low.

Pittsburgh Curb Market

Transactions Week Ended Oct. 31, 1929

	Sales	High	Low	Last	Change
Ark. Gas A	2,090	15½	8½	15	....

NEW YORK, Nov. 1.—A. J. Brooks, has resigned as sales manager of the Cincinnati sales division of the Vacuum Oil Co., to become associated with the American Meter Co., Albany, N. Y.

Richard J. Clark, recently with the Consolidated Gas Co., New York, has become associated with the American company at the D. McDonald & Co., factory in Albany.

Indian Refining Advertises New Oil Nationally

CLEVELAND, Nov. 2.—Indian Refining Co., Lawrenceville, Ill., is advertising its new wax-free motor oil in a national weekly magazine. In the current issue of the magazine a two page spread in colors is used.

The oil is made by the Govers process, named after Dr. F. X. Govers. Sale was begun Aug. 1 in the five states—Michigan, Indiana, Ohio, Illinois and Kentucky—in which Indian markets.

Col. J. H. Graham, president of Indian, told a sales convention late in July that the motor oil is a straight product made from a topped Illinois and Kentucky crude oil, distilled under vacuum.

The oil was placed on sale at 5000 points in the five states on Aug. 1. Previously the oil had been sold in a limited territory beginning October 1928 as part of the preliminary detail. On Sept. 6 the oil was placed on sale at 10,000 points.

TULSA, Nov. 2.—Frank Kerstetter, formerly assistant sales manager for the Sinclair Oil & Gas Co., gasoline department, has resigned, effective Nov. 1 and has removed to Atlanta, Ga., where he becomes affiliated with the Gillespie Auto Laundry System. Mr. Kerstetter probably will remain in Atlanta for a few months after which he will be transferred to one of the new units being constructed. Mr. Kerstetter was succeeded by William Clute.

research **service**

15 engineers are prepared
to advise and assist in
your container problems

100 pound grease drum
No. 11

BENETCO

"steel container specialists"

55 gallon oil drum
No. 3

30 gallon grease drum
No. 4A

WILSON & BENNETT MFG. CO.

6520 S. Menard Ave.
CHICAGO

39 Cortlandt St.
NEW YORK

dependability **craftsmanship**

Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Nov. 2 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14¼	£4,126,460	£ 1	Anglo-American Oil	36c	June 5, 29						
21⅛	15	18	13	.....	....	do certificates	36c	June 5, 29	3,700	14⅜	15	14⅜	14½	+ ⅛
20½	14⅜	17	12¼	.....	£ 1	do cts. non-voting	36c	June 5, 29	8,700	13	13¼	†12¼	13¼	+ ¼
5	1¼	2½	1	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	200	1	1	1	1	0
9¾	3¼	4⅛	1	$10,000,000	$50	do pfd	.....	.....						
56	44½	46½	25½	$1,000,000	25	Borne-Scrymser	$1S.A.	Oct. 15, 29	200	26½	27	26½	27	+ 1½
76	58	74¼	55	10,000,000	50	Buckeye Pipe Line	‡$1Q	Sept 14, 29	1,800	64	64	†55	60	— 7
161	117¼	210	140	3,000,000	25	Chesebrough Mfg	‡$1Q	Sept. 30, 29	500	161	161	†140	149	—12
23	16	29	8⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	3,300	18⅝	18⅝	†8⅛	16⅛	— 2½
17½	9½	11¾	5⅝	.....	N.P.	Creole Petroleum	.....	.....	39,000	7⅝	7¾	†5⅝	7⅛	— ⅝
82	67	95	45	1,500,000	50	Cumberland Pipe Line	$1Q	Sept. 16, 29	50	50	52¾	†45	52¾	— 7
88	64⅛	70½	49¾	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 29	40	51	51	†49¾	49¾	— 1¼
13	4¼	7	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	500	6½	6½	6½	6½	— ½
86	26	90	73½	4,000,000	100	do new pfd	.....	June 30 26	.....	.....	.....	.....	.....	.....
89¾	35	88	73½	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
114¾	59¼	128	75	73,685,700	25	Humble Oil & Refining	‡30cQ	Oct. 1, 29	57,800	108	123⅞	†75	95	—14
290½	176½	340½	285	20,000,000	100	Illinois Pipe Line	$10S.A.	June 15, 29	750	295	295	290	290	— 5
104	56¾	41	22	(sh) 26,421,768	N.P.	Imperial of Canada	12½cQ	Sept. 2, 29	22,900	34¾	35	†22	32	— 2¼
91⅞	74⅜	34⅞	26⅛	$1,000,000	$10	Indiana Pipe Line	.....	.....	2,400	33½	33½	†26⅛	32	— ⅜
55	35	29⅜	15	(sh) 14,247,088	N P	International Petroleum	12½c	June 25, 29	28,800	25⅞	26⅜	†15	23⅞	— 3
32⅜	19¾	25⅞	10½	$6,363,350	12.50	National Transit Co	25cQ	Sept. 16, 29	8,200	19	19	†10½	18¾	— ¼
75	38½	85	72	1,000,000	10	New York Transit	40c	Oct. 15, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	....	do new	.....	.....	.....	.....	.....	.....	.....	.....
69	56½	63	45	2,000,000	50	Northern Pipe Line	$2S.A.	July 1, 29	150	50	50	†45	45	— 5
83½	58½	79⅞	64⅛	60,000,000	25	Ohio Oil Co	50cQ	Sept. 14, 29	2,600	75⅝	75⅝	65	72⅞	— 2⅞
84	28	44½	20	10,000,000	25	Penn Mex. Fuel	$1	Sept. 30, 29	500	26	26½	†20	21	— 4
220	167	50	34⅜	4,000,000	25	Solar Refining	$1.25S.A.	June 20, 29	100	35	35	35	35	+ ⅜
19	12	23½	13	1,000,000	10	Southern Pipe Line	$1	Mar 1, 29	400	20⅞	21	20⅜	21	+ ⅜
71⅞	36¾	60¼	35⅛	30,000,000	25	South Penn Oil	50cQ	Sept. 30, 29	6,700	44⅞	44⅞	†35⅛	42½	— 2½
102	70	70	56	1,750 000	50	South West Pa. Pipe Lines	$1	Oct. 1, 29	.....	.....	.....	.....	.....	.....
95¼	70⅞	63	45	348,175,069	25	S. O. Indiana	62½cQ	Sept. 16, 29	328,800	56	56	†45	54⅛	— 1⅜
27¾	15	33¾	18	8,000,000	25	S. O. Kansas	.....	June 16, 24	6,400	28⅜	28½	22⅝	25	— 3⅛
49	44	46⅜	29	25,654,516	10	S. O. Kentucky new	40cQ	Sept. 30, 29	48,700	39¾	40½	†29	39	— 1⅜
54⅜	39⅞	50¼	44	4,649,225	25	S. O. Nebraska	‡62½cQ	Sept. 20, 29	900	45	47	†44	47	+ 1½
134	71	129	60	14,000.000	25	S. O. Ohio	62½cQ	Oct. 1, 29	3,300	95	95½	†60	95⅜	— 3⅛
125	116	124½	113½	7,000,000	100	do pfd	$1.75Q	Sept. 3, 29	50	115	115	115	115	— 4
23½	16	18	10	861,466	25	Swan Finch	30c	Jan. 15, 29	50	11	11	11	11	+ 1
111	72	133¾	75	126,154,000	25	Vacuum Oil	$1Q	Sept. 20, 29	18,500	115⅛	115⅛	†75	108	— 7¾

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Week Ended Nov. 2 Sales	First	High	Low	Last	Change
1½	53	72	125	$5	Amer. Cons. Oilfields	2,100	1/16	¼	†⅛	¼	+ 1/16
9½	3½	8¾	1½	N.P.	Amer. Maracaibo	29,400	2⅝	2⅝	†1⅛	2⅜	— ⅛
4½	2¼	4¾	1⅛	$10	Argo Oil	3,200	1⅞	1⅞	1¼	1⅜	+ ¼
3¾	3⅜	26	3¾	N.P.	Arkansas Nat. Gas	57,300	15⅛	19⅞	7⅝	13¾	— 1½
....	....	24¾	6½	N.P.	do A	227,400	15	15	†6½	13¾	— 1½
....	....	9	4	10	do pfd	4,900	8¼	8¼	†4	7⅛	— 1¼
55	32¾	70	50	N.P.	British American Oil	.....	....	....	....	....	.....
23⅞	3¾	4⅞	1½	25c	Carib Syndicate	1,900	2	2	†1½	2	+ ⅛
....	....	68⅛	20	N.P.	Cities Service new	2,572,900	46⅛	46⅛	†20	37½	— 7¾
103½	94½	99¼	87	100	do pfd	4,600	91¾	91¾	†87	88⅞	— 4⅛
9⅝	8⅞	9¼	8⅞	10	do pref B	.....	....	....	....	....	.....
97	88½	96	89¼	100	do pref. BB	.....	....	....	....	....	.....
2¼	1	1½	½	1	Colombia Syndicate	2,300	½	1/16	½	1/16	+ ⅛
17¾	9¾	15	6	N.P.	Colon Oil	7,200	8	8	6	7⅛	— ⅞
8⅞	6¼	11⅛	2½	10	Consolidated Royal	2,500	4⅞	4⅞	†2½	4½	— ⅜
....	....	135	45	N.P.	Cosden Oil Co	9,500	105	107	55	105	+ 2⅝
....	....	82	71	....	do pfd	.....	....	....	....	....	.....
3¼	.76	2½	⅝	N.P.	Crown Central	1,200	¾	⅞	¾	⅞	+ ⅛
15	6¾	11¾	4	N.P.	Crystal Oil	.....	....	....	....	....	.....
50	48	51⅛	51¼	$100	do pfd	.....	....	....	....	....	.....
33½	8⅛	26	7¾	N.P.	Darby Petroleum	8,200	10⅞	10⅞	†7¾	10¼	— ⅝
2⅞	1	11	2	N.P.	Derby Oil & Refining	1,500	5¼	10⅞	4⅞	5	— ¾
21⅛	7½	44	5	N.P.	do pfd	400	33	32	†5	5	—30
165	101⅛	209	121⅞	$25	Gulf Oil Corp	89,800	165¼	165¼	†121⅞	147½	—18¾
7½	5⅝	7½	1⅛	5	Homaokla Oil	5,200	3⅝	3⅝	3	3⅛	— ½
....	....	49¼	5	$1	Indian Territory	43,800	30⅛	30⅛	5	25	— 6
3⅜	1	2⅛	⅝	10	Intercontinental Pet.	18,400	1⅛	1⅞	¾	⅞	— ¼
3	¼	3⅝	1¼	N.P.	Kirby Petroleum	6,800	2⅜	2⅜	†1¼	1½	— ½
9⅜	5⅛	6⅛	2	N.P.	Leonard Oil & Dev	3,800	2¾	2⅞	2⅛	2¼	— ⅛
43⅜	20	38⅞	18	N.P.	Lion Oil & Refg	3,800	24	24	21½	21½	+ 1½
....	....	67⅞	28	N.P.	Lone Star Gas	8,800	45	45	†28	40⅞	— 6⅛
1⅞	.50	1¼	¼	1	Magdalena Syndicate	9,800	¼	½	†¼	½	+ ⅛
48½	32	38½	16	N.P.	Margay Oil	1,800	16	16	†16	16	— 1¾
8	2¾	6⅜	2¾	N.P.	Mexico-Ohio Oil	1,800	3	3	3	3	0
....	....	42	8	N.P.	Missouri-Kan. P. L.	15,400	24⅝	24⅝	†8	17⅛	— 4⅞
1¾	.76	1½	¾	1	Mountain & Gulf	7,800	⅜	⅜	¾	¾	0
28⅞	19½	22⅞	7	10	Mountain Producers	19,800	9¾	9¾	7⅝	8½	— 1¼
....	....	43⅞	24¾	N.P.	Nat. Fuel Gas (new)	4,800	32	32	25	28⅞	— 3⅛
5⅜	4¼	5	2¼	5	New Bradford	300	2⅞	2⅞	†2¼	2¼	— ⅝
5½	3	3⅞	3	10	New England Fuel	700	3	3	3	3	0
11⅞	7⅛	9⅜	2¼	1	New Mex. & Ariz	1,000	3½	3½	†2¼	3	— ½
15½	11⅜	24½	11⅜	25	New York Petrol	800	15¾	15¾	†11⅛	15	— ¾
13¼	8⅛	18½	8¾	N.P.	North Cent. Texas	3,400	10½	10½	9¼	9⅜	— 1⅜
....	....	19¼	8⅛	N.P.	Oil Stock, Ltd. A	1,500	12¼	12¼	†8⅛	10	— 2¼
....	....	18¼	10	N.P.	do B	200	13	13	†10	10	— 4½
26¾	20	26⅝	12⅝	N.P.	Pacific Western Oil	1,100	18	18	†12⅝	20¾	+ 2¾
6	2¼	3½	½	N.P.	Pandem Oil	1,500	1/16	1/16	½	½	— 1/16
15⅝	8½	10½	3¼	N.P	Pantepec Oil	500	4⅞	4⅞	†3¼	3⅝	— ⅜
20	10⅝	25½	22½	$25	Paragon Refg. B. ctfs.	.....	....	....	....	....	.....
....	....	34½	18	N.P.	Petroleum Corp	26,500	23⅞	23⅞	†18	18⅞	— 5¼
31⅜	26½	37	22	N.P.	Plymouth Oil	700	26¼	26⅞	23¼	26⅞	+ ⅜
18	8	16	9⅝	25	Red Bank Oil	500	10	10	†9⅝	9⅝	— 5⅜
13	4⅛	8¼	1⅜	N.P.	Reiter-Foster	400	3¼	3¼	†1⅜	3	— ¼
31½	23¼	25½	23	$25	Richfield pfd	.....	....	....	....	....	.....
....	....	29	20	....	Root Refining pfd	300	20	20¼	†20	20¼	— 1¾
12	4⅝	11	3	N.P.	Ryan Consolidated	600	4⅞	5	†3	3⅜	— 1⅝
7¼	5½	5⅞	2	$10	Salt Creek Cons	300	2	2½	2	2½	+ ⅛
35	23¼	25⅞	9⅛	10	Salt Creek Prod	2,700	11	11	†9⅛	10	— 1⅜
3½	1	2½	½	5	Savoy Oil	.....	....	....	....	....	.....
40	27	33⅛	32	25	Shreveport El Dorado	.....	....	....	....	....	.....
....	....	24	12	N.P.	Southland Royalty	3,700	14	14½	†12	13⅞	— ⅛
....	....	12	6⅝	N.P.	Sunray Oil	300	7	7	†6⅝	7	0
....	....	23	7⅛	N.P.	Texon Oil & Land new	4,400	12½	13⅞	†7⅛	12½	— ⅛
22⅞	13	16⅞	11⅜	$10	Tidal Osage	.....	....	....	....	....	.....
21¼	13¼	16½	10⅛	10	do not-voting	.....	....	....	....	....	.....
93¾	75	155	80	100	Transcontinental pfd	.....	....	....	....	....	.....
74¼	18	81⅜	66	10	Venezuela-Mexico	100	75	75	75	75	— 4½
9⅛	4¾	6½	1¾	3	Venezuelan Petrol	8,100	3¼	3¼	†1¾	2¾	— ¼
....	....	72¼	66	N.P.	White Star Oil	.....	....	....	....	....	.....
8¼	4⅞	9⅛	4	1	Woodley Petroleum	1,800	4½	4⅞	4	4	— ¼
⅝	⅛	5⅜	1	25	Y Oil & Gas	300	1	1⅛	1	1	— ⅛

*New High †New Low

New York Curb Bonds

Week Ending Nov. 1

	High	Low	Last	Change
Beacon Oil 6s '36	115	101½	113	—4
Cities Serv. 5s '66	85	82	83	—3
Cities Serv. G. 5½s '42	84	82¼	83	—2
Cities Serv. G. P. 6s '43	92⅞	90	90	—4⅛
Cont. Oil 5½s '37	93⅛	92¼	92¼	—1½
Empire O & R 5½s '42	85	84½	84½	— ⅜
Gulf Oil 5s '37	99⅝	98⅛	98⅛	—1½
Gulf Oil 5s '47	100⅛	99⅛	99⅛	— ½
Indep. Oil 6s '39	102⅛	98⅛	100	—2⅛
Shell Union Oil 5s '49	100⅛	92½	95⅛	—11⅞
Sun Oil 5s '39	100	99½	100	+ ¼
Valvoline Oil 7s '37	100½	100½	100½	+ ½

New York Bonds

Week Ending Nov. 1

	High	Low	Last	Change
Asso. Oil gold 6s	101½	100¾	101⅛	— ⅜
Atlantic Refg. deb. 5s	100⅛	99⅞	100	0
Cal. Pet. 5s	94⅞	92	93	—1⅞
Cal. Pet. 5½s	99	96¼	96¼	—2¾
General Pet. 5s	99¾	99	99	— ¾
Humble Oil & Refg. 5s	100	97	97	—2¾
Humble Oil & Refg. 5½s	100¼	98	99	— ¾
Pan. Amer. P & T 7s	104½	104½	104½	0
Pan Amer. P & T 6s	105½	101	102¼	—2¾
Pan Amer. P & T 6s	98	94	94	—3
Phillips Pet. 5½s	89	87	87¼	—3
Pierce Oil deb. 8s	104	103	103	—2½
Pure Oil 5½s	99⅛	97⅜	98	— ⅝
Richfield Oil Calif. 6s	99	97½	97½	—1
Shell Union Oil 5s	95	93	93	—1½
Sinclair Con. Oil 7s	101	96½	99	—1⅝
Sinclair Con. Oil 6½s	100	96	96	—3⅝
Sinclair Con. Oil 6s D	99	98½	98½	— ½
Sinclair Con. Crude 5½s	96½	99	99	—1⅞
Sinclair Pipeline	93½	89½	91	—2½
Skelly Oil 5½s	89⅞	88	88	—1
S. O. N. J. 5½s	102	100¾	101	— ½
S. O. N. Y. 4½s	96	95	95¼	— ½
Union Oil of Calif. 6s A	105¾	104	104	—2
Union Oil of Calif. 1st 5s A	97	96½	96½	—3½
Union Oil of Calif. 5s C	97	95¾	96	0
Warner-Quinlan 6s	93½	91	91	—3
White Eagle Oil 5½s	100¾	99	99	—1½

Oil Dividends

	Amount	Payable	Stock of Record
Buckeye Pipe Line q	$1	Dec. 14	Nov. 2
Penn Mex Fuel	$1	Dec. 14	Dec. 5
Pure Oil q	37½c	Dec. 16	Nov. 16
Southern Pipe Line	$10	Dec. 31	Dec. 2
S. O. Indiana q	62½c	Dec. 16	Nov. 16
do extra	25c	Dec. 16	Nov. 16

Cities Service Cancels Stock Offering

NEW YORK, Nov. 2.—Directors of the Cities Service Co. have withdrawn the rights to stockholders of Nov. 7 record to subscribe to common stock at the rate of one share for each 10 shares held that day.

At the time the subscription offer was made, the company's stock was selling above $60 a share but in the crash which carried market prices of all stocks downward, Cities Service fell below the subscription price of $45 a share.

Richfield Buys Three More Chains in East

NEW YORK, Oct. 31.—Richfield Oil Corp. of New York, subsidiary of the Richfield Oil Co. of California, has purchased the Heath Oil Co. of Binghamton, N. Y., the Cleary Service Stations, Rochester, N. Y., and the Peerless Oil Co. which operates in New Jersey and Pennsylvania.

Richfield in recent weeks has added more than 200 bulk and service stations to its facilities in the East. The company was formed only this year by the merging of the Walburn Petroleum Co. and the Acewood Petroleum Co.

The latest purchases represent several million gallons of gasoline distribution a year.

Sun to Pay Extra in Stock

PHILADELPHIA, Oct. 31.—Sun Oil Co. has declared a 9 per cent stock dividend payable Dec. 16 to stock of Nov. 25 record. This dividend is in addition to the regular cash dividend of 25 cents a share a quarter on the common stock.

NEW YORK—C. H. Longshore, vice-president of the Richfield Oil Corp. of New York, sailed today to look over the oil markets in England and continental Europe.

S. O. Indiana May List On Big Exchange

CLEVELAND, Nov. 4.—Directors of the Standard Oil Co. of Indiana are considering listing the stock of that company on the New York Stock Exchange. Heretofore the stock has had trading privileges of the New York Curb Market.

President E. G. Seubert of the Indiana company announced that the extra dividend declared last week was made possible by the "excellent earnings of the company this year."

With the payment of the regular dividend of 62½ cents a share and the extra of 25 cents a share Dec. 15 the Indiana company will have paid $3.25 a share this year in addition to the 50 per cent stock dividend in March.

Southern Pipe Line to Pay $10

CLEVELAND, Nov. 4.—Southern Pipe Line Co. has declared a stock reduction dividend of $10 a share payable Dec. 31 to stock of Dec. 2 record. The payment, the company announced, is to be wholly from receipts from the sale of the company's assets.

PITTSBURGH, Nov. 4.—Lone Star Gas Corp. stockholders have approved an amendment to the charter authorizing the issue of $10,000,000 of $100 par 6½ per cent cumulative preferred stock. Offering of the stock is to be made from time to time at the discretion of the directors to acquire additional properties.

Natural Gas in Calif. May Curtail Fuel Market

LOS ANGELES, Oct. 31.—Fuel oil is threatened as a heat producing medium in California due to the need to use natural gas in every way possible. This of course, will be true only in case the gas conservation law is actually enforced.

From information recently given out by the Bureau of Mines it appears, that the use of fuel oil for heating buildings is on the increase.

The California Oil and Gas Association estimates that, based upon fuel oil installations throughout the country, the consumption of fuel oil during the next twelve months will approximate 1,500,000,000 gallons or nearly 2,500,000 gallons more than last year's consumption.

In the Bureau of Mines' report it was stated although fuel oil has been used in heating buildings in the United States for nearly 50 years its widespread utilization and application to domestic heating are developments of the latter half of the post-war period. On the Pacific coast fuel oil has been used for several decades but along the Atlantic coast and particularly in the cities of Portland, Me. to Washington, D. C. the most rapid strides in the use of fuel oil have been made within the past five years.

WASHINGTON—A group of industrialists in Switzerland plan to begin manufacture of a product called "gazogene" to replace gasoline as a motor fuel, according to the Bureau of Foreign and Domestic Commerce.

THE OIL INDUSTRY EXCHANGE

Situations Open

SALESMEN WANTED

to sell high grade chassis and gear lubricants, on commission basis, direct to stations equipped to render complete lubrication service. Good programme of sales helps and advertising to back you.

Address Post Office Box 611, Erie, Pa.

Business Opportunities

LARGE well equipped plant with plate fabricating shop, pattern shop, foundry and machine shop wishes to secure patented specialties to manufacture. Complete information should be submitted for consideration. Address Box 436.

FACTORY CONNECTION WANTED

Sales Company Covering Gulf Coastal Oil fields and Refineries desires direct factory connection. Experienced in equipment sales and we know oil field Requirements.

Manufacturers Equipment Co.,
629 Chronicle Bldg.,
Houston, Texas.

MAKE THIS OFFICE TULSA HEADQUARTERS

Will buy petroleum products for your account Small commission.

Wire or Write for Details

DALE W. MOORE

532-533 Mayo Bldg., Tulsa, Okla.
Telephones: 3-4177 and 3-4178.
L. D. 136

Professional

L. G. Huntley J. R. Wylie, Jr.
Shirley L. Mason

HUNTLEY & HUNTLEY

PETROLEUM GEOLOGISTS AND ENGINEERS

Frick Building PITTSBURGH, PA

Patents

ROYAL E. BURNHAM
Attorney-At-Law

Patent and Trade-Mark Practice Exclusively

Continental Trust Building
Washington, D. C.

Miscellaneous

REWARD

for information in regard to Lee Smith, salesman formerly with the Allied Grease & Oil Company, Chicago. Mr. Smith drives a tan 1927-70 Chrysler Coach, Minnesota license No. B34577, Serial number on dash board No. PS2635. Write or wire at my expense.

Address A. Zekman, 1408 Hennepin Ave., Minneapolis, Minnesota.

ADVERTISERS INDEX

National Petroleum News

Adamson Mfg. Co.....
Agefci..... 71
Alliance Tank Co.....
Allis Co., Louis.....
Aluminum Company of America.....
American Can Co.....
American Chemical Products Co.....
American Flange & Mfg. Co..... 76
American La France & Foamite Corp..... 74
American Oil & Grease Corp.....
American Oil Pump & Tank Co..... 16
American Radiator Co.....
American Schaeffer & Budenberg Corp.....
American Stainless Steel Co.....
American Telephone and Telegraph Co..... 34
Anderson Prichard Oil Corp..... 110
Aqua Systems Inc.....
Artcraft Sign Co.....
Aurora Equipment Co.....
Autocar Co.....
Au-to Compressor Co.....
Automobile Rotary Lift Co.....

Babcock & Wilcox Tube Co.....
Badger & Sons Company, E. B.....
Barnsdall Refineries, Inc.....
Battenfeld Grease & Oil Co..... 1
Bennett Export Corp..... 85
Bennett Pumps Corp..... 85
Berry, Jas. B. Sons, Inc.....
Bessemer Gas Engine Co.....
Bethlehem Steel Co..... 69
Biggs Boiler Works Co.....
Birmingham Tank Co.....
Blackmer Pump Co.....
Bowser & Co., Inc., S. F.....
Bradley & Son, Inc., C. C.....
Braun & Co., C. F.....
Breuer Electric Mfg. Co.....
Brockway Motor Truck Co.....
Brookins Mfg. Co..... 101
Brown Sheet Iron & Steel Co..... 103
Buckeye Iron & Brass Works.....
Budd Wheel Co.....
Buffalo Meter Co..... 115
Bullard-Davis, Inc..... 67
Burford Oil Co..... 14-15
Butler Mfg. Co..... 60

Campbell, J. A.....
Canfield Oil Co., Cleveland.....
Canode Mfg. Co., F. C..... 103
Carbondale Machine Co.....
Central Alloy Steel Corp.....
Champion Pneumatic Mach. Co.....
Champlin Refining Co..... 83
Chestnut & Smith Corp.....
Chevrolet Motor Co.....
Chicago Bridge & Iron Works..... 115
Cincinnati Advertising Products Co.....
Cincinnati Ball Crank Co.....
Classified Advertising..... 119
Cleveland Brass Mfg. Co.....
Columbian Steel Tank Co.....
Combustion Engineering Corp.....
Continental Can Co.....
Continental Oil Co.....
Continental Refining Co.....
Continental Rubber Works.....
Continental Supply Co.....
Cooper-Bessemer Corp.....
Cooper Co., C. & G.....
Corey & McKenzie Co.....
Correct Measure Co..... 8-9
Cosma Laboratories Co.....
Crocker-Wheeler Electric Mfg. Co.....
Crouse-Hinds Co.....
Crown Central Petroleum Corp.....
Cushing Refining & Gasoline Co.....
Curtis Pneumatic Machinery Co.....

Daugherty & Son Refg. Co., W. H.....
Davis Welding & Mfg. Co.....Third Cover
Dayton Air Compressors..... 112
Deepwater Oil Refineries.....
Derby Oil & Refining Corp.....
Detroit Graphite Co.....
Dodge Bros..... 107
Dodge Steel Co.....
Draper Mfg. Co.....
du Pont de Nemours, E. I. & Co., Inc.....
Dyestuffs & Chemicals, Inc.....

Eaton Bumper & Spring Service Co.....
Economy Engineering Co.....
Edeleanu Process..... 71
Edwards Mfg. Co..... 101
Edwards Valve & Mfg. Co.....
El Dorado Refg. Co..... 88
Electric Service Supplies Co..... 109
Emerson-Scheuring Tank Co.....
Empire Oil Works, Inc.....
Empire Oil & Refining Co..... 6

Engineering, Research & Equip. Co.....
Erie Meter Systems, Inc.....
Esline Co.....
Ethyl Gasoline Corp.....
Eureka Machine Co.....

Ferro Machine & Foundry Co.....
Fisk Tire Co., Inc.....
Fiske Bros. Refg. Co.....
Flexlume Corp.....
Foster-Wheeler Corp.....
Foxboro Co., Inc.....
Franklin Creek Refg. Co.....
Freedom Oil Works..... 105
Frontier Manufacturing Co.....
Fruehauf Trailer Co.....
Frick-Reid Supply Co.....

Galena Oil Corp.....
General Motors Truck Co.....
General Porcelain Enameling & Mfg. Co.....
Gilbert & Barker Mfg. Co..... 13
Globe Machinery & Supply Co.....
Globe Oil & Refg. Co.....
Goodrich Rubber Co., B. F.....
Goodyear Tire & Rubber Co., Inc..... 11
Gott Mfg. Co., H. P.....
Granberg Meter Corp.....
Graver Corp.....
Gray Co., Inc.....
Gray Processes Corp..... 68
Greenspon's Sons Iron & Steel Co., Jos..... 59
Griscom-Russell Co.....
Gulf Ref. Co..... 115

Halliburton Oil Well Cementing Co.....
Heine Boiler Co.....
Highland Body Mfg. Co..... 95
Highway Trailer Co.....
Hills-McCanna Co.....
Holmes Co., Ernest.....
Hope Engineering Co.....
Hughes Tool Co..... 54
Humble Oil & Refg. Co.....
Hybinette, Victor.....

Icy-Flo Oil Co.....
Imperial Refg. Co..... 5
Independent Oil & Gas Co.....
Indiana Truck Corp.....
Indian Refg. Co.....Insert
Industrial Oil Corp.....
International Combustion Eng. Corp.....
International Derrick & Equipment Co.....
International Harvester Co.....

Jackson Engineering Corp.....
Jenkins Bros..... 43

Kanotex Ref. Co.....
Kellogg Co., M. W..... 68
Key Boiler Equipment Co..... 73
King-Seeley Corp.....
Klean-Rite Auto Laundry Co.....

Ladd Water Tube Boiler Co.....
La Salle Petroleum Co.....
Leach Co., C. H.....
Leader Iron Works..... 95
Lientz & Company, B. P.....
Lion Oil Refining Co..... 10
Louisiana Oil Refg. Co..... 78
Lubri Appliance Co.....
Lubricating Appliance Mfg. Co., Inc.....
Luce Trunk Co..... 87
Ludlum Steel Co.....

Marley Co.....
Mars Company.....
Martin & Schwartz, Inc.....
McDonald Mfg. Co., A. Y.....
McKee & Co., Arthur G.....
Merco Nordstrom Valve Co.....
Merit Equipment Corp.....
Metal Hose & Tubing Co.....
Metal Shelter Co.....
Metric Metal Works.....
Meyercord Co.....
Mid-Continent Petroleum Corp.....
Milestone Meter Systems, Inc.....
Miller Son's Co., A. D.....
Milwaukee Tank Works.....
Morrison Bros.....
Mutual Refg. Co..... 112

National Brake & Electric Co.....
National Cantube Co.....
National Carbon Co..... 7-80
National Fire Proofing Co.....
National Foam System Inc.....
National Petroleum News..... 12-56
National Recording Pump Co.....Second Cover
National Refining Co..... 87
National Safe & Lock Co.....
National Transit Pump & Machine Co..... 68
National Tube Co..... 38

New York Lubricating Oil Co.....
North American Car Corp..... 115
Northern Pump Co..... 64

Oakite Products, Inc..... 67
Ohio Steel Foundry Co.....
Ohmer Fare Register Co.....
Oil Conservation Engineering Co..... 58
Oildraulic Lift Co.....
Oil Well Supply Co..... 49
Oliver United Filters, Inc..... 91
Omar Refg. Co.....
Ottawa Mfg. Co.....
Owens-Illinois Glass Co.....
Oxweld Acetylene Co.....

Perfection Mfg. Co.....
Petroleum Iron Works Co.....
Pforzheimer & Co., Carl H.....
Phillips Petroleum Co.....
Pittsburgh-Des Moines Steel Co.....
Pittsburgh Equitable Meter Co.....
Platt Co., W. C..... 101
Powers Regulator Co.....
Pressed Steel Tank Co.....
Producers & Refiners Corp .....
Pure Oil Co.....Fourth Cover
Pyrene Mfg. Co.....

Quigley Furnace Specialties Co. Inc.....
Quincy Compressor Co.....

Reading Iron Co.....
Reid Gas Engine Co., Joseph.....
Repcal Brass Mfg. Co.....
Republic Steel Package Co.....
Rheem Mfg. Co.....
Roper Corp., Geo. D.....

Selden Co.....
Service Station Equip. Co.....
Service Recorder Co.....
Shaffer Oil & Refg. Co.....
Sharpsville Boiler Works Co.....
Silent Glow Oil Burner Corp.....
Sinclair Refining Co..... 92
Sistersville Tank & Boiler Works.....
Skelly Oil Co.....
Smith Engineering Co.....
Southwest Air Fast Express.....
Southwestern Engineering Corp.....
Spang, Chalfant & Co., Inc..... 52
Standard Boiler & Plate Iron Co.....
Standard Steel Works.....
Steel Drum Accessories Corp.....
Sterling Motor Truck Co.....
Sterling Oil Co.....
Stockham Pipe & Fittings Co.....
Stratford Engineering Co.....
Sun Oil Co.....
Sun Shipbuilding & Dry Dock Co.....
Superior Oil Works..... 112
Swan-Finch Refg. Co.....

Tagliabue Mfg. Co., C. J.....
Taylor Instrument Companies..... 69
Texas Pacific Coal & Oil Co.....
Tokheim Oil Tank & Pump Co..... 4
Trailmobile Co.....
Transcontinental Oil Co.....
Tube Turns, Inc.....
Tulsa Boiler & Machinery Co.....

Union Carbide & Carbon Corp.....
Union Metal Mfg. Co.....
U. S. Air Compressor Co.....
U. S. Pipe & Foundry Co.....
Universal Oil Products Co..... 65
Universal Pump & Tank Corp..... 86

Vacuum Oil Co.....
Viking Pump Co..... 112
Vilter Mfg. Co.....
Viscosity Oil Co.....
Vogt Machine Co., Henry..... 70
Vulrox Corporation.....

Wadhams Oil Co.....
Walworth Co..... 2-3
Ward Chemical Corp.....
Warner Mfg. Co.....
Warren Refining & Chemical Co..... 91
Wayne Co.....
Westcott & Greis, Inc.....
Wheaton Brass Works, A. W..... 36
Whitehead & Kales Co.....
Willock Oil Corp..... 109
Wilmoh Mfg. Corp.....
Wilson & Bennett Mfg. Co..... 117
Winkler-Koch Eng. Co.....

York Safe Lock Co.....

Zero Hour Torpedo Co.....